Solitron DEVICES, INC.
TRANSISTOR DIVISION
1177 BLUE HERON BLVD. · RIVIERA BEACH, FLA. 33404 · (305) 848-4311

TO–3 TO–66

2N5737 2N5739
2N5738 2N5740
SDT3825 SDT3805
SDT3826 SDT3806
SDT3827 SDT3807

10 AMP

PNP INDUSTRIAL TRANSISTORS

ABSOLUTE MAXIMUM RATINGS

	2N5737	2N5738	2N5739	2N5740
BV_{CBO}	–60 V	–100 V	–60 V	–100 V
BV_{CEO}	–60 V	–100 V	–60 V	–100 V
BV_{EBO}	–5 V	–5 V	–5 V	–5 V
I_c(Max.)	–10 A	–10 A	–10 A	–10 A
I_B(Max.)	–2 A	–2 A	–2 A	–2 A
P_T(100°C Case)	45 W	45 W	20 W	20 W
Operating Junction Temperature	200°C			
Storage Temperature Range	–65°C to 200°C			

ELECTRICAL CHARACTERISTICS (25°C Ambient)

SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	TYPE
Static						
V_{CEO}(sus)	I_B= 0, I_c= –100 mA	–60	–	–	Volts	2N5737, 2N5739
	I_B= 0, I_c= –100 mA	–100	–	–	Volts	2N5738, 2N5740
I_{CEX}	V_{CE}= Rated V_{CE}, V_{BE}= 1.5 V	–	–	–10	μA	All
	V_{CE}= Rated V_{CE}, V_{BE}= 1.5 V, T_c= 150°C	–	–	–500	μA	All
I_{EBO}	V_{EB}= –5 V	–	–	–100	μA	All
h_{FE}	I_c= –5 A, V_{CE}= –5 V	20	–	80	–	All
V_{CE}(sat)	I_c= –5 A, I_B= –0.5 A	–	–	–0.5	Volts	All
V_{BE}(sat)	I_c= –5 A, I_B= –0.5 A	–	–	–1.2	Volts	All
Dynamic						
t_d	(See Figure No. 1)	–	1	–	Nsec	All
t_r	(See Figure No. 1)	–	100	–	Nsec	All
t_s	(See Figure No. 1)	–	600	–	Nsec	All
t_f	(See Figure No. 1)	–	125	–	Nsec	All
h_{fe}	V_{CE}= –10 V, I_c= –1 A, f= 1 MH_Z	10	–	–	–	All
C_{obo}	V_{CB}= –10 V, I_E= 0, f= 1 MH_Z	–	–	250	pf	All

ADDITIONAL DEVICES

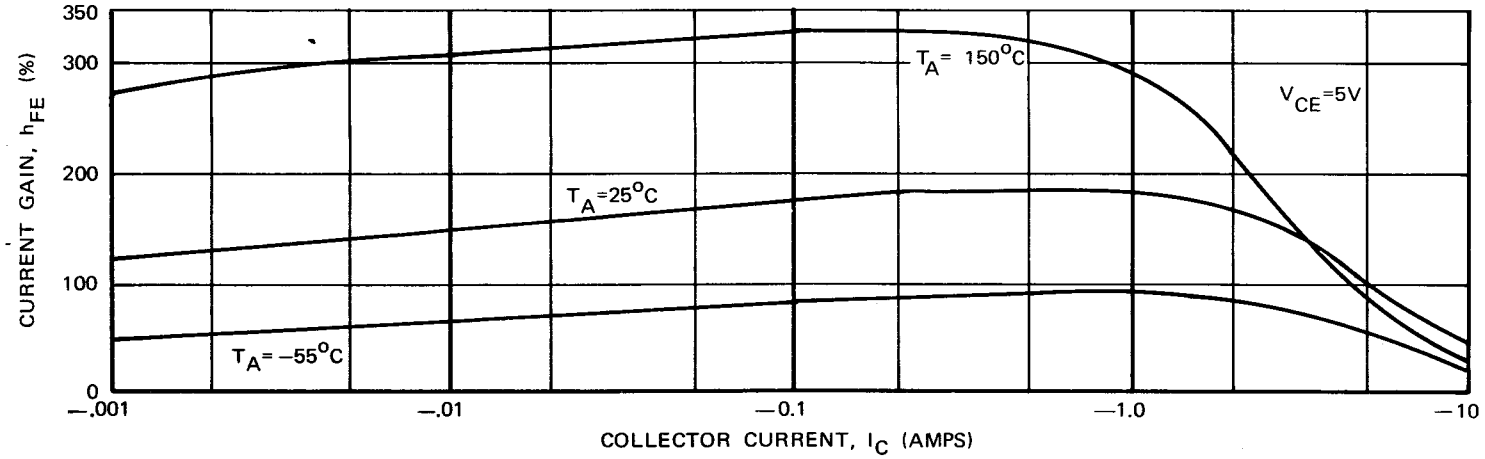
ABSOLUTE MAXIMUM RATINGS

	SDT3805 SDT3825	SDT3806 SDT3826	SDT3807 SDT3827
BV_{CBO}	−40 V	−80 V	−40 V
BV_{CEO}	−40 V	−80 V	−40 V
BV_{EBO}	−5 V	−80 V	−5 V
I_c(Max.)	−10 A	−10 A	−10 A
I_B(Max.)	−2 A	−2 A	−2 A
P_T(100°C Case) TO−3	45 W	45 W	45 W
P_T(100°C Case) TO−66	20 W	20 W	20 W
Operating Junction Temperature	200°C		
Storage Temperature Range	−65°C to 200°C		

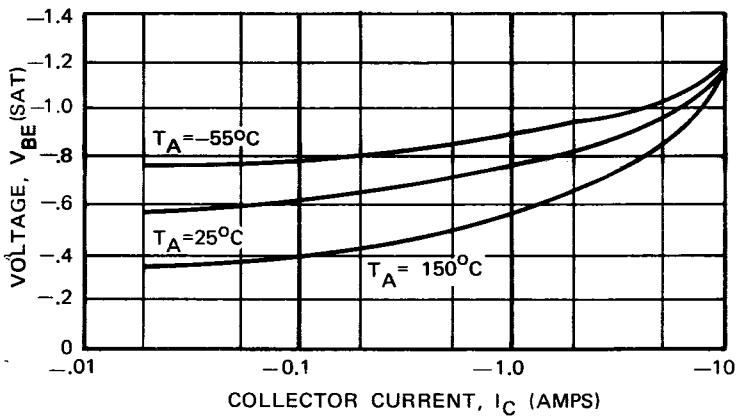
ELECTRICAL CHARACTERISTICS (25°C Ambient)

SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	TYPE
tatic						
V_{CEO}(sus)	I_B= 0, I_c=−100 mA	−40	–	–	Volts	SDT3805, SDT3825
	I_B= 0, I_c=−100 mA	−40	–	–	Volts	SDT3807, SDT3827
	I_B= 0, I_c=−100 mA	−80	–	–	Volts	SDT3806, SDT3826
I_{CEX}	V_{CE}= Rated V_{CE}, V_{BE}= 1.5 V	–	–	−0.1	mA	All
	V_{CE}= Rated V_{CE}, V_{BE}= 1.5 V, I_c= 150°C	–	–	−10	mA	All
I_{EBO}	V_{EB}=−5 V	–	–	−1.0	mA	All
h_{FE}	I_c= −5 A, V_{CE}= −5 V	20	–	80	–	SDT3805, SDT3806 SDT3825, SDT3826
	I_c= −5 A, V_{CE}= −5 V	40	–	–	–	SDT3807, SDT3827
V_{CE}(sat)	I_c= −5 A, I_B= −0.5 A	–	–	.75	Volts	All
V_{BE}(sat)	I_c= −5 A, I_B= −0.5 A	–	–	1.2	Volts	All
ynamic						
t_d	(See Figure No. 1)	–	1	–	Nsec	All
t_r	(See Figure No. 1)	–	100	–	Nsec	All
t_s	(See Figure No. 1)	–	600	–	Nsec	All
t_f	(See Figure No. 1)	–	125	–	Nsec	All
h_{fe}	V_{CE}= −10 V, I_c= −1 A, f= 1 MH_z	10	–	–	–	All
C_{obo}	V_{CB}= −10 V, I_E= 0, f= 1 MH_z	–	–	250	pf	All

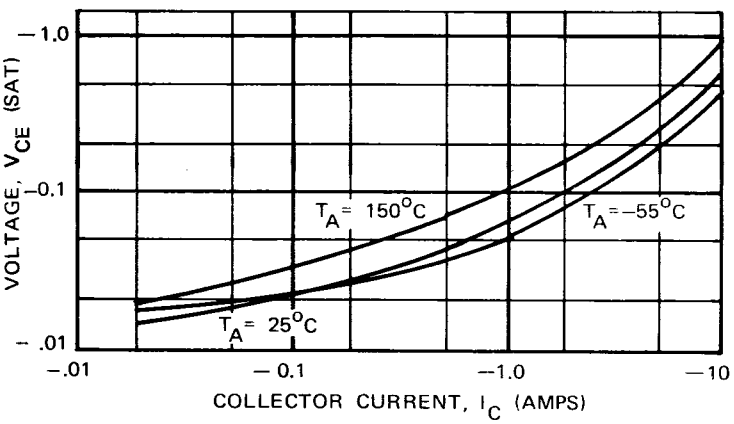
CHARACTERISTIC CURVES (ALL TYPES)



h_{FE} vs I_C



V_{BE}(sat) vs I_C



V_{CE}(sat) vs I_C

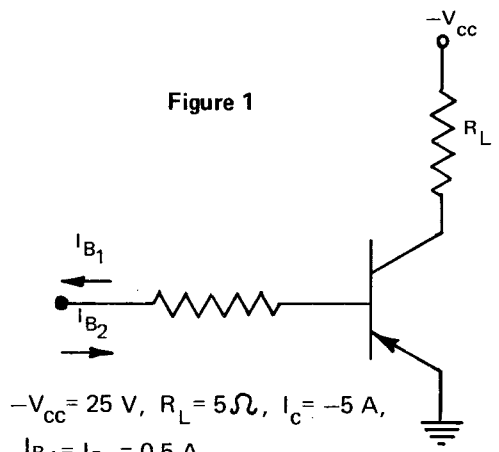
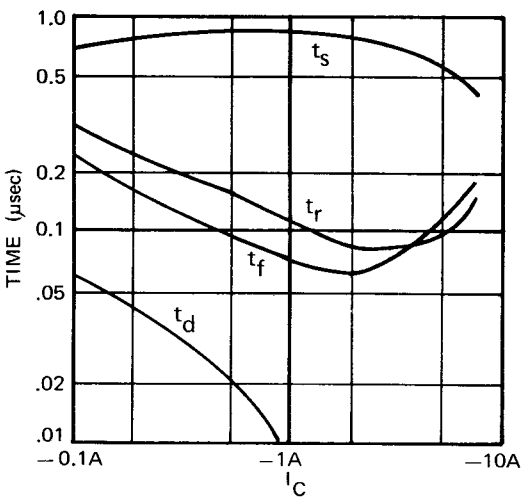
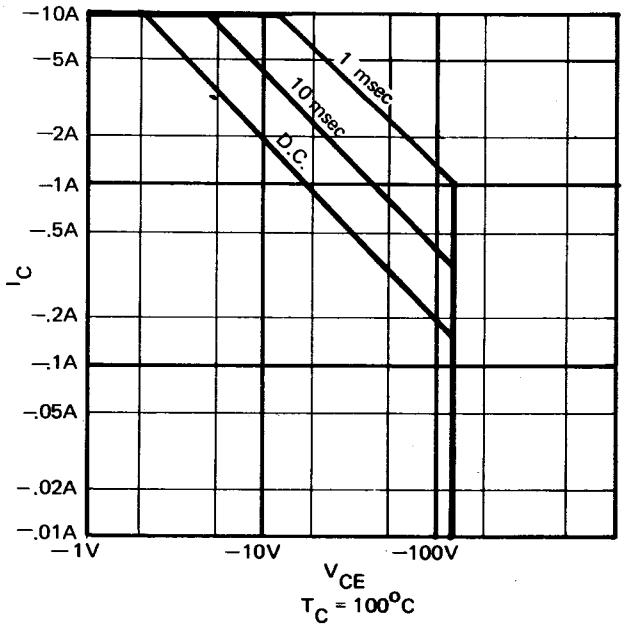


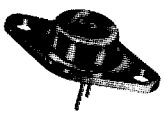
Figure 1

$-V_{cc}$= 25 V, R_L= 5Ω, I_c= −5 A,
I_{B1}= I_{B2}= 0.5 A

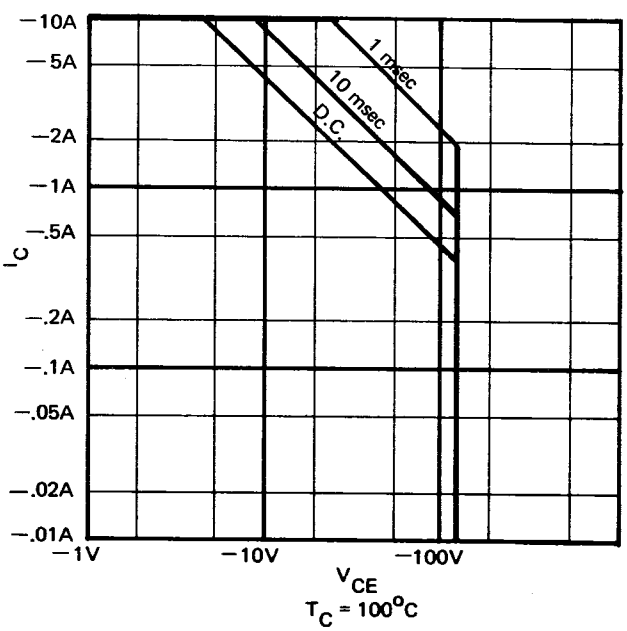


SWITCHING TIME vs I_C





TO–66



TO–3

SOLITRON REGIONAL OFFICES

NORTHEAST
256 Oak Tree Road
Tappan, New York 10983
Telephone No. (914) 359-5050
TWX No. (710) 576-2654

MIDWEST
Suite No. 218
O'Hare Office Center North
2720 Des Plaines Avenue
Des Plaines, Illinois 60018
Telephone No. (312) 824-8127
TWX No. (910) 233-2634

WESTERN
4014 Long Beach Blvd.
Long Beach, California 90807
Telephone No. (213) 426-0331
TWX No. (910) 341-6417

SOUTHEAST
1177 Blue Heron Blvd.
Riviera Beach, Florida 33404
Telephone No. (305) 848-4311
TWX No. (510) 952-6676

SOUTHWEST
13333 N. Central Expressway
Suite No. 220
Dallas, Texas 75080
Telephone No. (214) 231-8224

EUROPE
Solidev Ltd.
9A High Street
Bromley, Kent, England
Telephone No. (Bromley) 01-464-4588
Cable – Solidev Bromley
Kent, England

When you think of semiconductors... think Solitron!

Solitron DEVICES, INC.
TRANSISTOR DIVISION
1177 BLUE HERON BLVD. · RIVIERA BEACH, FLA. 33404 · (305) 848-4311

TO–3	TO–66
2N5741	2N5743
2N5742	2N5744
SDT3875	SDT3850
SDT3876	SDT3851
SDT3877	SDT3852

20 AMP

PNP INDUSTRIAL TRANSISTORS

ABSOLUTE MAXIMUM RATINGS

	2N5741	2N5742	2N5743	2N5744
V_{CBO}	–60 V	–100 V	–60 V	–100 V
V_{CEO}	–60 V	–100 V	–60 V	–100 V
V_{EBO}	–5 V	–5 V	–5 V	–5 V
I_c (Max.)	–20 A	–20 A	–20 A	–20 A
I_B (Max.)	–4 A	–4 A	–4 A	–4 A
P_T (100°C Case)	55 W	55 W	24 W	24 W
Operating Junction Temperature	200°C			
Storage Temperature Range	–65°C to 200°C			

ELECTRICAL CHARACTERISTICS (25°C Ambient)

Static

SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	TYPE
V_{CEO} (sus)	I_B = 0, I_c = –100 mA	–60	–	–	Volts	2N5741, 2N5743
	I_B = 0, I_c = –100 mA	–100	–	–	Volts	2N5742, 2N5744
I_{CEX}	V_{CE} = Rated V_{CE}, V_{BE} = 1.5 V	–	–	–10	μA	All
	V_{CE} = Rated V_{CE}, V_{BE} = 1.5 V, T_c = 150°C	–	–	–500	μA	All
I_{EBO}	V_{EB} = –5 V	–	–	–100	μA	All
h_{FE}	I_c = –10 A, V_{CE} = –5 V	20	–	80	–	All
V_{CE} (sat)	I_c = –10 A, I_B = –1 A	–	–	–1.5	Volts	All
V_{BE} (sat)	I_c = –10 A, I_B = –1 A	–	–	–1.5	Volts	All

Dynamic

t_d	(See Figure No. 1)	–	1	–	Nsec	All
t_r	(See Figure No. 1)	–	200	–	Nsec	All
t_s	(See Figure No. 1)	–	250	–	Nsec	All
t_f	(See Figure No. 1)	–	250	–	Nsec	All
h_{fe}	V_{CE} = –10 V, I_c = –1 A, f= 1 MHz	10	–	–	–	All
C_{obo}	V_{CB} = –10 V, I_E = 0, f= 1 MHz	–	–	500	pf	All

ADDITIONAL DEVICES

ABSOLUTE MAXIMUM RATINGS

	SDT3850 SDT3875	SDT3851 SDT3876	SDT3852 SDT3877
V_{CBO}	−40 V	−80 V	−40 V
V_{CEO}	−40 V	−80 V	−40 V
V_{EBO}	−5 V	−5 V	−5 V
I_C(Max.)	−20 A	−20 A	−20 A
I_B(Max.)	−4 A	−4 A	−4 A
P_T(100°C Case) TO−3	55 W	55 W	55 W
P_T(100°C Case) TO−66	24 W	24 W	24 W
Operating Junction Temperature	200°C		
Storage Temperature Range	−65°C to 200°C		

ELECTRICAL CHARACTERISTICS (25°C Ambient)

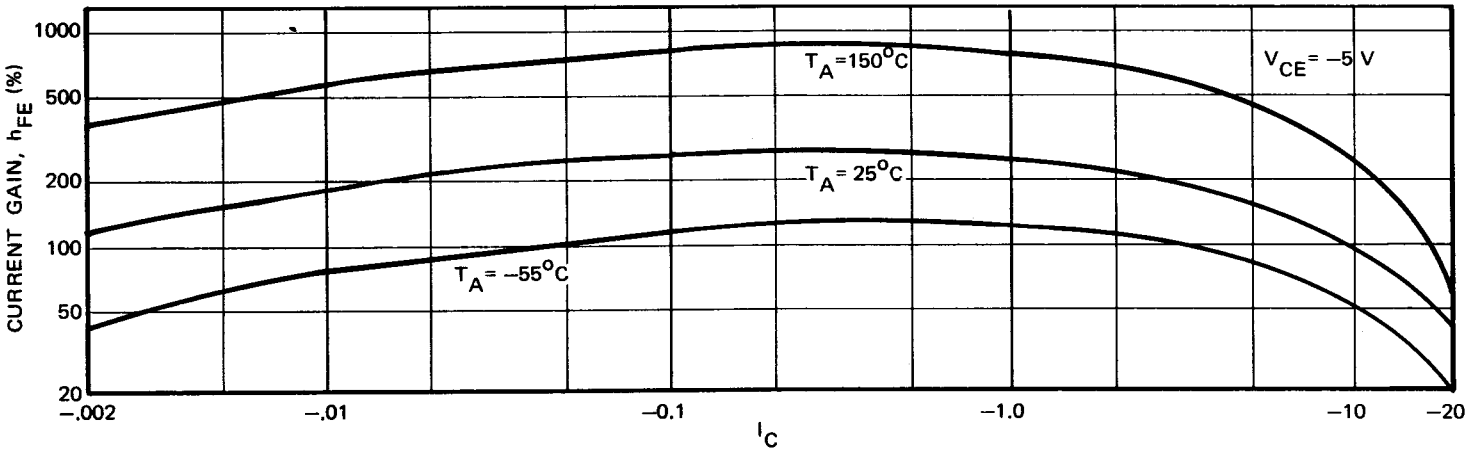
Static

SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	TYPE
V_{CEO}(sus)	I_B= 0, I_c= −100 mA	−40	–	–	Volts	SDT3850, SDT3875
	I_B= 0, I_c= −100 mA	−40	–	–	Volts	SDT3852, SDT3877
	I_B= 0, I_c= −100 mA	−80	–	–	Volts	SDT3851, SDT3876
I_{CEX}	V_{CE}= Rated V_{CE}, V_{BE}= 1.5 V	–	–	−0.1	mA	All
	V_{CE}= Rated V_{CE}, V_{BE}= 1.5 V, T_c= 150°C	–	–	−10	mA	All
I_{EBO}	V_{EB}= −5 V	–	–	−1.0	mA	All
h_{FE}	I_c= −10 A, V_{CE}= −5 V	20	–	80	–	SDT3850, SDT3851 SDT3875, SDT3876
	I_c= −10 A, V_{CE}= −5 V	40	–	–	–	SDT3852, SDT3877
V_{CE}(sat)	I_c= −10 A, I_B= −1 A	–	–	−1.8	Volts	All
V_{BE}(sat)	I_c= −10 A, I_B= −1 A	–	–	−2.0	Volts	All

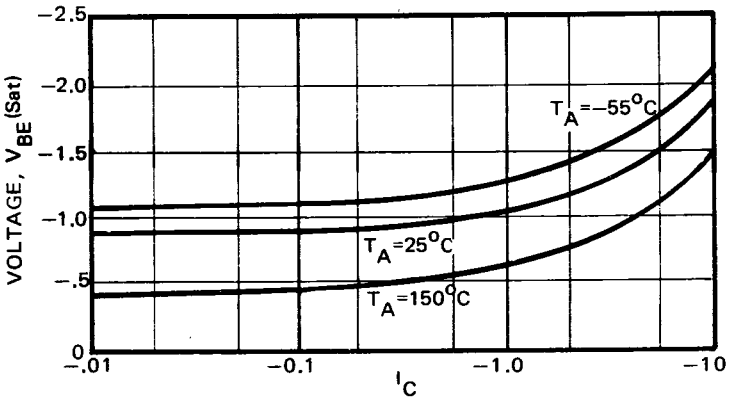
Dynamic

t_d	(See Figure No. 1)	–	1	–	Nsec	All
t_r	(See Figure No. 1)	–	200	–	Nsec	All
t_s	(See Figure No. 1)	–	250	–	Nsec	All
t_f	(see Figure No. 1)	–	250	–	Nsec	All
h_{fe}	V_{CB}= −10 V, I_c= −1 A, f= 1 MH_Z	10	–	–	–	All
C_{obo}	V_{CB}= −10 V, I_E= 0, f= 1 MH_Z	–	–	500	pf	All

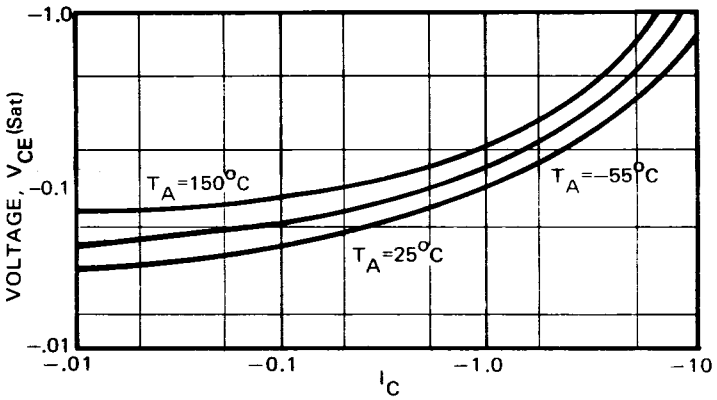
CHARACTERISTIC CURVES (ALL TYPES)



h_{FE} vs I_C

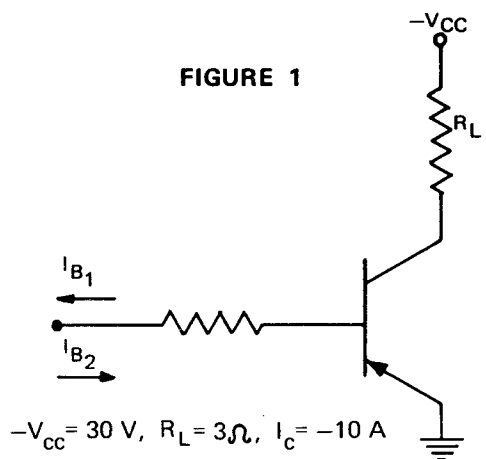


V_{BE}(SAT) vs I_C



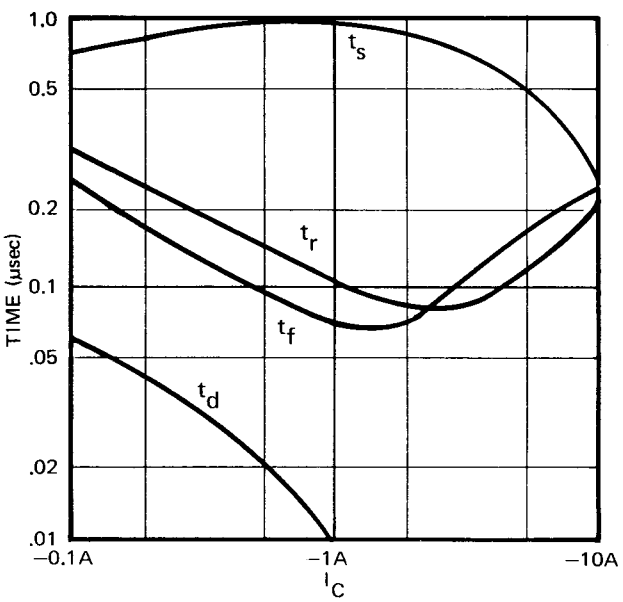
V_{CE}(SAT) vs I_C

FIGURE 1

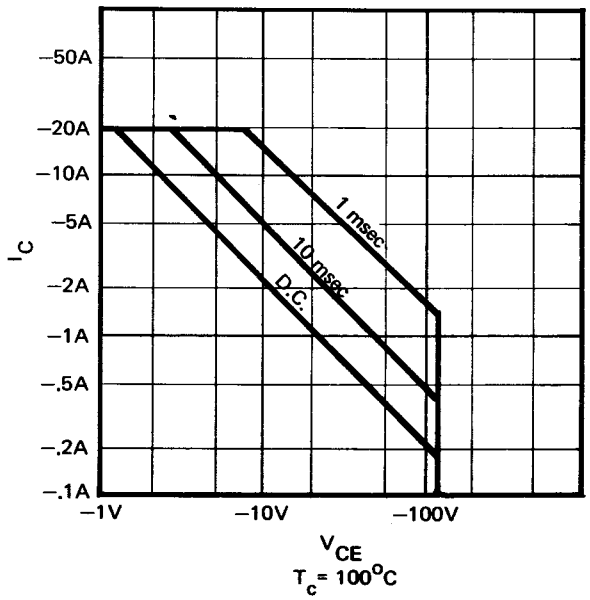


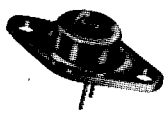
$-V_{CC}$= 30 V, R_L= 3Ω, I_c= −10 A

I_{B_1}= I_{B_2}= 1 A

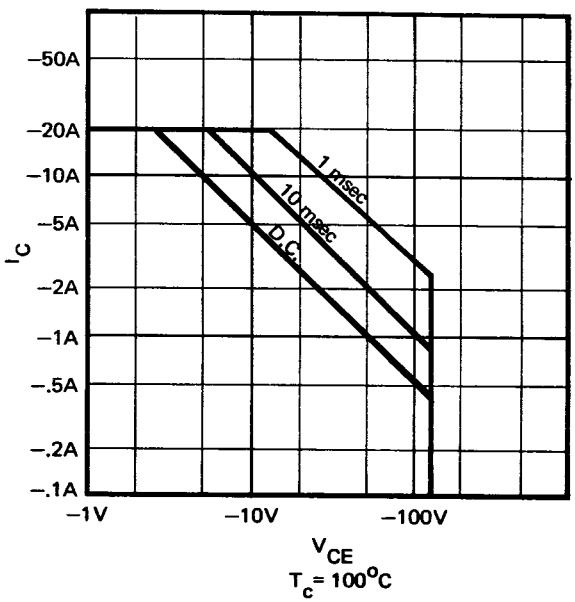


SWITCHING TIME vs I_C





TO–66



TO–3

SOLITRON REGIONAL OFFICES

NORTHEAST
256 Oak Tree Road
Tappan, New York 10983
Telephone No. (914) 359-5050
TWX No. (710) 576-2654

MIDWEST
Suite No. 218
O'Hare Office Center North
2720 Des Plaines Avenue
Des Plaines, Illinois 60018
Telephone No. (312) 824-8127
TWX No. (910) 233-2634

WESTERN
4014 Long Beach Blvd.
Long Beach, California 90807
Telephone No. (213) 426-0331
TWX No. (910) 341-6417

SOUTHEAST
1177 Blue Heron Blvd.
Riviera Beach, Florida 33404
Telephone No. (305) 848-4311
TWX No. (510) 952-6676

SOUTHWEST
13333 N. Central Expressway
Suite No. 220
Dallas, Texas 75080
Telephone No. (214) 231-8224

EUROPE
Solidev Ltd.
9A High Street
Bromley, Kent, England
Telephone No. (Bromley) 01-464-4588
Cable – Solidev Bromley
Kent, England

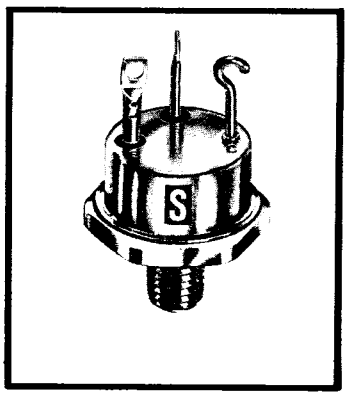
When you think of semiconductors... think Solitron!

Solitron DEVICES, INC.
TRANSISTOR DIVISION
1177 BLUE HERON BLVD. · RIVIERA BEACH, FLA. 33404 · (305) 848-4311

2N6215

70 AMP Peak

SILICON NPN POWER TRANSISTORS



FEATURES:

- Multiple diffused planar structure for excellent reliability.
- Excellent high-current gain and switching characteristics, with fast turn-off times.
- Safe Operating ARea specified with curves for forward-biased operation and clamped inductive switching.

ABSOLUTE MAXIMUM RATINGS

*Collector-Base Voltage	100 V
*Collector-Emitter Voltage	80 V
*Emitter- Base Voltage	8.0 V
*Peak Collector Current	70 A
*Continuous Collector Current	50 A
*Base Current	10 A
*Storage Temperature	−65°C to +200°C
*Operation Temperature	−65°C to +200°C
*Power Dissipation (100°C Case)	125 W
*Power Dissipation (25°C Case)	219 W
*Lead Temperature 1/16" from case for 10 sec. max.	250°C
*Thermal Resistance $\Theta_{j\text{-}c}$	0.8°C/W
Thermal Time Constant of Chip	35 msec typical

*In accordance with JEDEC registration

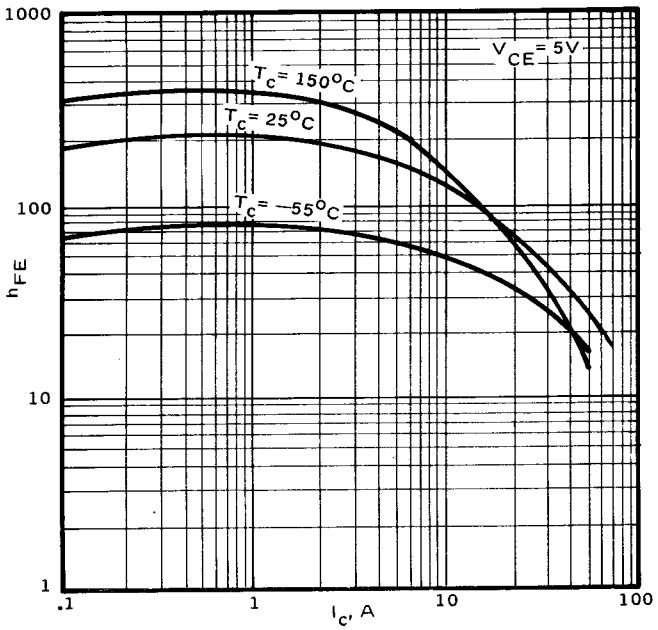
ELECTRICAL CHARACTERISTICS @ 25°C ambient unless otherwise specified

All in accordance with JEDEC registration.

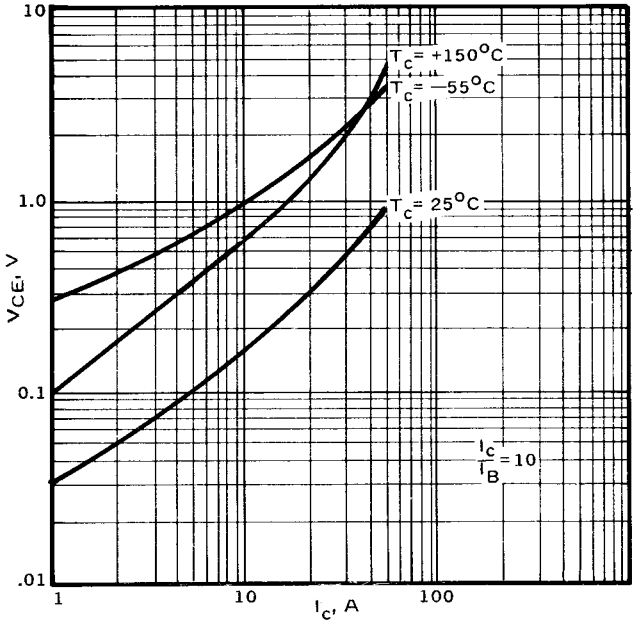
[1] Pulsed, t_p= 300μs, duty cycle=2%

SYMBOL	CONDITIONS	MIN.	MAX.	UNITS
I_{CEV}	V_{CE}= 80V, V_{EB}= 0.5V, T_A= 150°C	–	200	μA
I_{CEV}	V_{CE}= 100V, V_{EB}= 0.5V	–	200	μA
I_{CBO}	V_{CB}= 80V	–	1.0	μA
I_{EBO}	V_{EB}= 8.0V	–	200	μA
I_{EBO}	V_{EB}= 5.0V	–	1.0	μA
$V_{CEO}(sus)$ [1]	I_c= 200mA	80	–	V
h_{FE} [1]	I_c= 25A, V_{CE}= 2.0V	25	150	–
h_{FE} [1]	I_c= 50A, V_{CE}= 5.0V	15	–	–
$V_{CE}(sat)$ [1]	I_c= 25A, I_B= 1.25A	–	0.8	V
$V_{CE}(sat)$ [1]	I_c= 50A, I_B= 5.0A	–	1.5	V
$V_{BE}(sat)$ [1]	I_c= 25A, I_B= 1.25A	–	1.5	V
$V_{BE}(sat)$ [1]	I_c= 50A, I_B= 5.0A	–	2.5	V
t_r	I_c= 25A, I_{B_1}= 1.25A	–	1.0	μs
t_s	I_c= 25A, I_{B_1}= $-I_{B_2}$= 1.25A	–	1.0	μs
t_f	I_c= 25A, I_{B_1}= $-I_{B_2}$= 1.25A	–	0.25	μs
$\lvert h_{fe} \rvert$	I_c= 1.0A, V_{CE}= 10V, f= 10 MHz	2.0	–	–

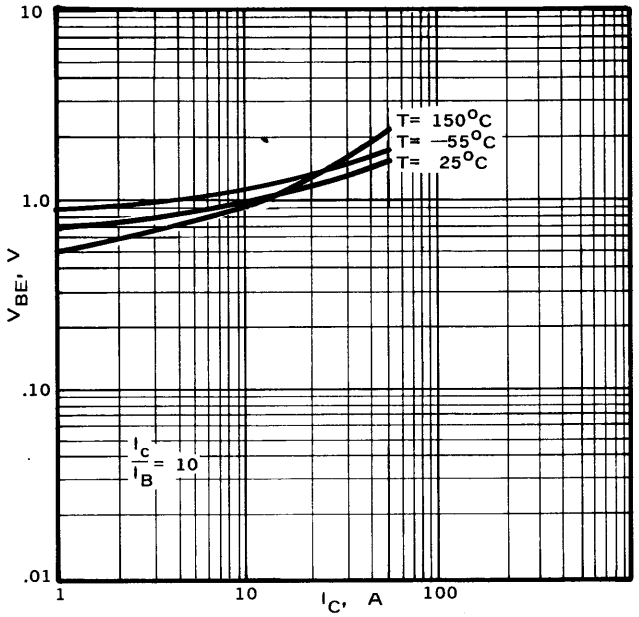
TYPICAL h_{FE} vs I_C



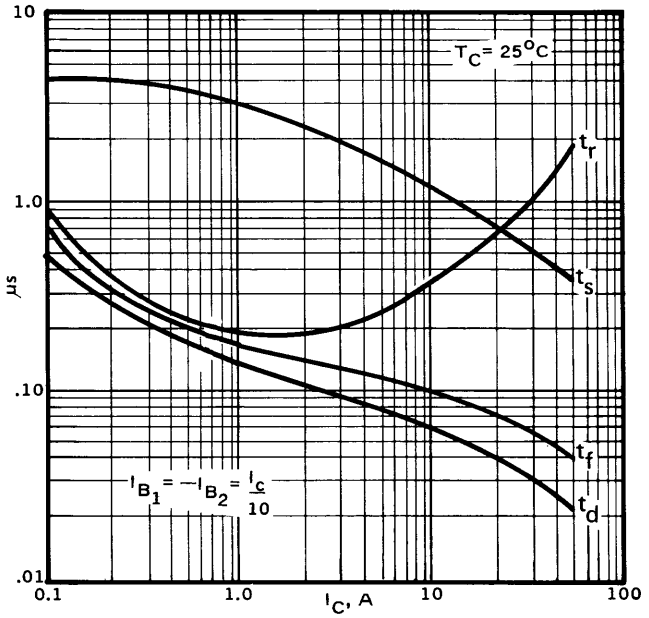
TYPICAL $V_{CE}(sat)$ vs I_c



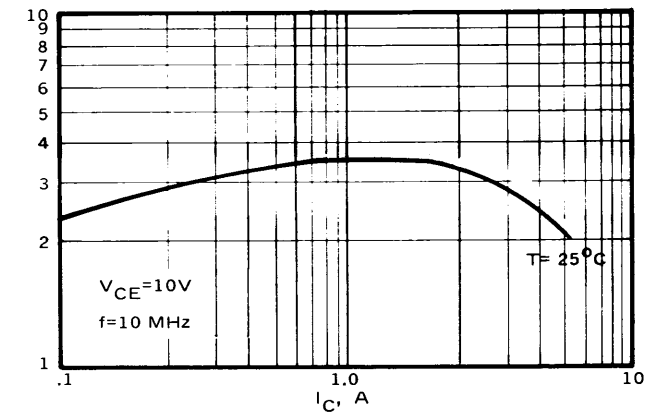
Typical V_{BE}(sat) vs I_C



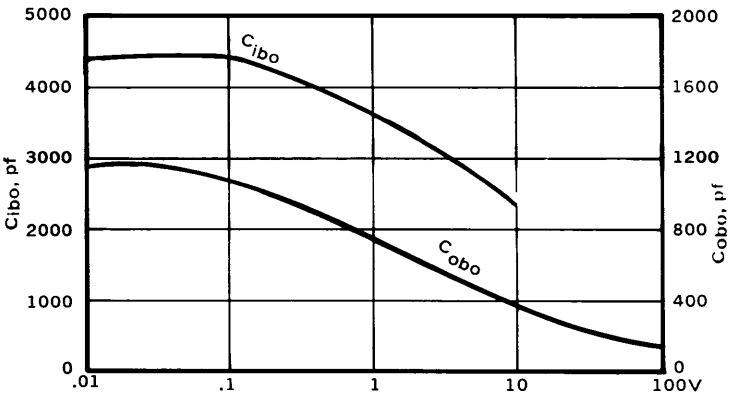
Typical SWITCHING TIME



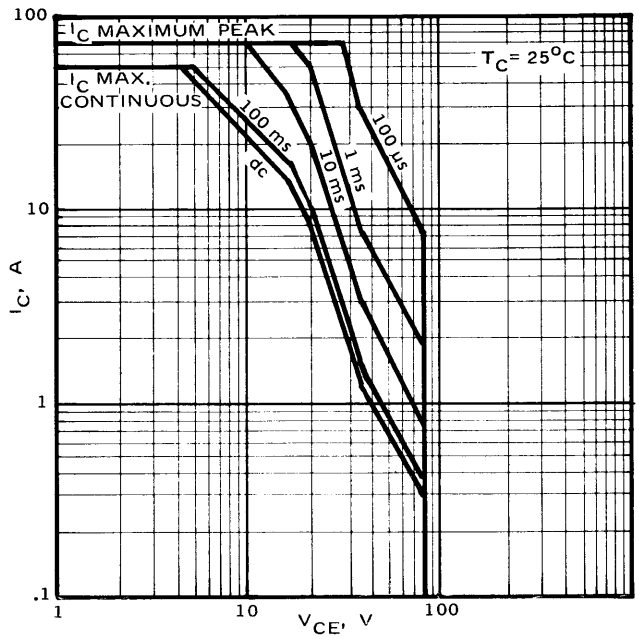
Typical h_{fe} vs I_C



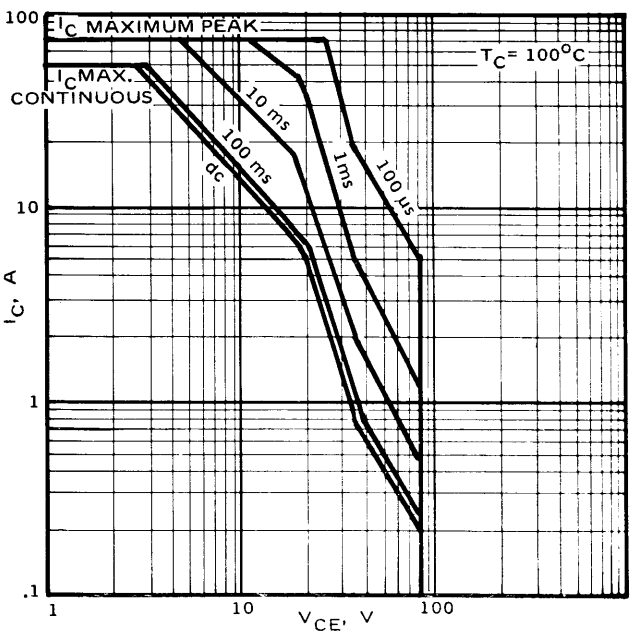
C_{ibo} vs V_{EB} C_{obo} vs V_{CB}



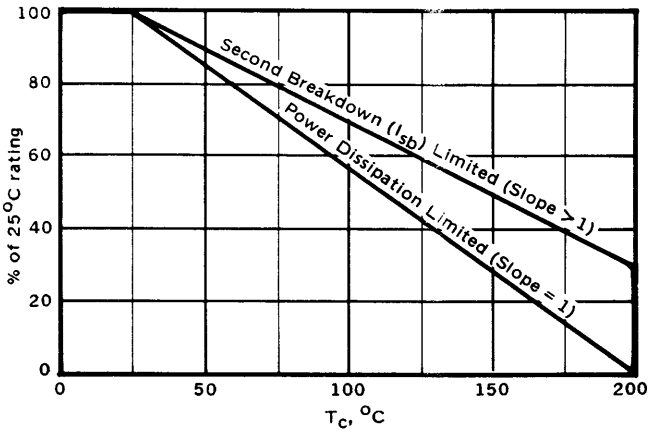
FORWARD-BIASED SAFE AREA



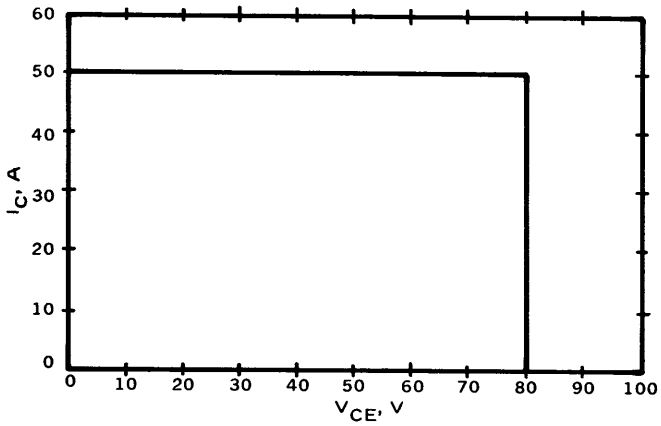
FORWARD-BIASED SAFE AREA



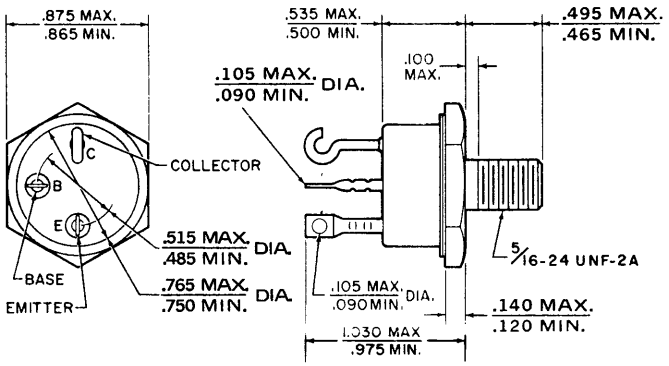
DERATING CURVE
for FORWARD-BIASED SAFE AREA PLOTS



SAFE OPERATING AREA
CLAMPED INDUCTIVE SWITCHING



OUTLINE DIMENSIONS TO-63



NOTES: 1. Collector is electrically common to case.
2. All dimensions in inches.

MOUNTING

It is very important that a power transistor be provided with a good heat dissipating facility. The surface to which the transistor is attached must be flat and free from burrs. The nut must be tightened securely (12 in.-lb. minimum to 20 in.-lb. maximum torque limit when used against a metal chassis or the bushing supplied, provided that all parts are clean and dry).

SOLITRON FACILITIES

TAPPAN, N. Y.
256 Oak Tree Road
914 / 359-5050

Diodes & Rectifiers
Zeners
High Voltage Assemblies
Power Rectifiers
Thick Film Hybrid Circuits

RIVIERA BEACH, FLA.
1177 Blue Heron Blvd.
305 / 848-4311

Hi Rel Power Transistors
Si. & Ge. Power Transistors
PNP-NPN Industrial Transistors

PORT SALERNO, FLA.
Cove Road
305 / 833-6528

Precision RF Connectors
Cable Assemblies
Loads & Terminations
Strip Line Launchers
Couplers
Custom Strip Line Assemblies

SAN DIEGO, CALIF.
8808 Balboa Avenue
714 / 278-8780

FET & Dual FET Transistors
MOS Devices
MOS/FET Memory Arrays
Shift Registers
Monolithic IC's

JUPITER, FLA.
1440 W. Indiantown Rd.
305 / 746-8311

Microwave Stripline
Microwave Semiconductors
RF Transistors
Microwave Integrated Circuits

SOLITRON REGIONAL OFFICES

NORTHEAST
52 Pickering Street
Needham, Massachusetts 92192
Telephone (617) 444-1152, TWX (710) 325-7514

WESTERN
20944 Sherman Way, Suite 112
Canoga Park, California 91303
Telephone (213) 833-3822, TWX (910) 494-1238

SOUTHWEST
10511 Church Road, Suite No. 1
Dallas, Texas
Telephone (214) 341-1180

MIDWEST
Suite 218, O'Hare Office Center North
2720 Des Plaines Avenue
Des Plaines, Illinois 60018
Telephone (312) 842-8127, TWX (910) 233-2634

SOUTHEAST
1177 Blue Heron Blvd.
Riviera Beach, Florida 33404
Telephone (305) 848-4311, TWX (510) 952-7610

EUROPE
Solidev Ltd.
Sevenoaks, Kent, England
Telephone (Sevenoaks) 57541/2/3
Cable – Solitron Svoaks, Telex. # 95378

When you think of semiconductors... think Solitron!

2N6216
2N6217

20 AMP Peak
SILICON NPN POWER TRANSISTORS

FEATURES:

- Planar process for excellent reliability
- Low f_T speed to eliminate unwanted oscillations
- Outstanding fast switching characteristics with low storage time.
- Safe Operating ARea (SOAR) specified with curves for forward-biased operation and for unclamped inductive switching

TO–3

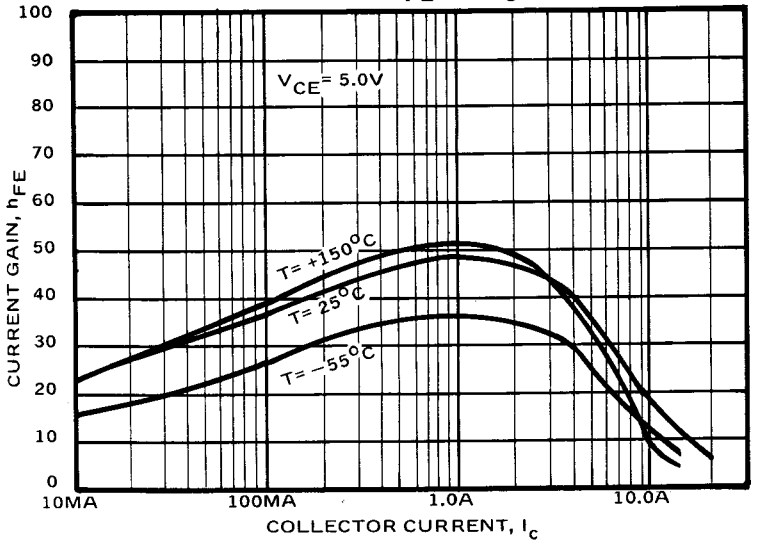
ABSOLUTE MAXIMUM RATINGS

	2N6216	2N6217
Collector-Base Voltage	200 V	140 V
Collector-Emitter Voltage	150 V	80 V
Emitter-Base Voltage	20 V	20 V
Continuous Collector Current	10 A	10 A
Peak Collector Current	20 A	20 A
Continuous Base Current	2 A	2 A
Peak Base Current	4 A	4 A
Storage Temperature	−65°C to +200°C	
Operating Junction Temperature	−65°C to +200°C	
Power Dissipation (100°C Case)	71.4 W	71.4 W
Power Dissipation (25°C Case)	125 W	125 W
Lead Temperature 1/16" from case for 10 seconds max.	250°C	250°C

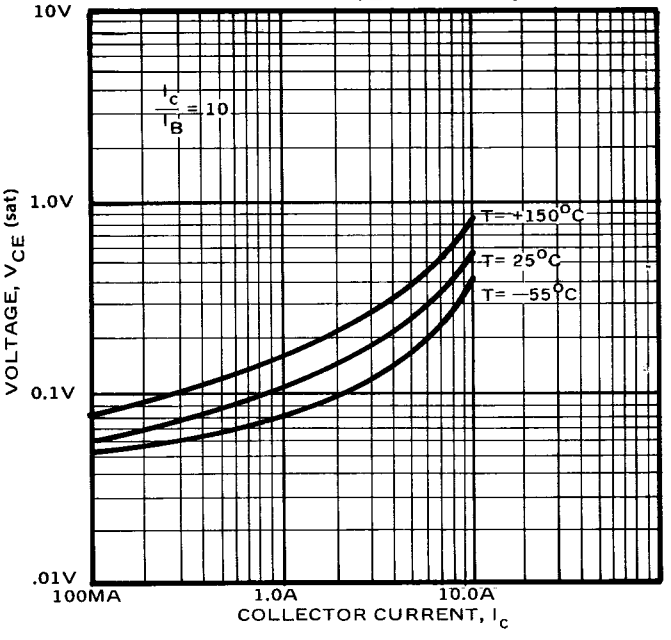
ELECTRICAL CHARACTERISTICS (25°C Ambient unless noted)

SYMBOL	CONDITIONS	MIN	MAX.	UNITS	TYPE
Static					
I_{CEX}	V_{CE}= 60 V, V_{BE}= −0.5 V, T_C= 150°C	—	100	μA	Both
I_{CEX}	V_{CE}= 200 V, V_{BE}= −0.5 V	—	100	μA	2N6216
I_{CEX}	V_{CE}= 140 V, V_{BE}= −0.5 V	—	100	μA	2N6217
I_{CBO}	V_{CB}= 60 V	—	1.0	μA	Both
I_{EBO}	V_{EB}= 20 V	—	100	μA	Both
I_{CEO}	V_{CE}= 50 V	—	10	μA	Both
V_{CEO}(sus)	I_C= 200 mA	150	—	Volts	2N6216
V_{CEO}(sus)	I_C= 200 mA	80	—	Volts	2N6217
h_{FE}	I_C= 10 A, V_{CE}= 5.0 V	15	—	—	Both
h_{FE}	I_C= 5.0 A, V_{CE}= 5.0 V	20	80	—	Both
V_{CE}(sat)	I_C= 10 A, I_B= 1.0 A	—	1.25	Volts	Both
V_{CE}(sat)	I_C= 5.0 A, I_B= 0.5 A	—	0.50	Volts	Both
V_{BE}	I_C= 10 A, V_{CE}= 5.0 V	—	1.5	Volts	Both
V_{BE}(sat)	I_C= 5.0 A, I_B= 0.5 A	—	1.2	Volts	Both
Dynamic					
C_{ob}	V_{CB}= 10 V	—	250	pf	Both
h_{fe}	V_{CE}=5.0V, I_C=0.5A, f= 1 KHz	20	—	—	Both
$\lvert h_{fe} \rvert$	V_{CE}= 10V, I_C= 1A, f = 1 MHz	5.0	—	—	Both
$T_{(ON)}$	V_{CE}= 20V, I_C= 5A, I_B= 0.5A	—	0.8	μsec	Both
$T_{(OFF)}$	V_{CE}= 20V, I_C= 5A, I_B= 0.5A	—	1.0	μsec	Both

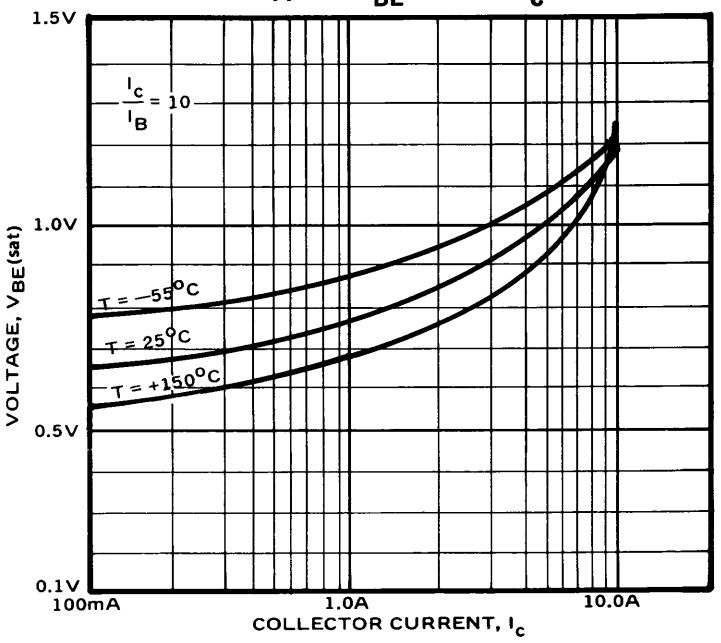
Typical h_{FE} vs I_C



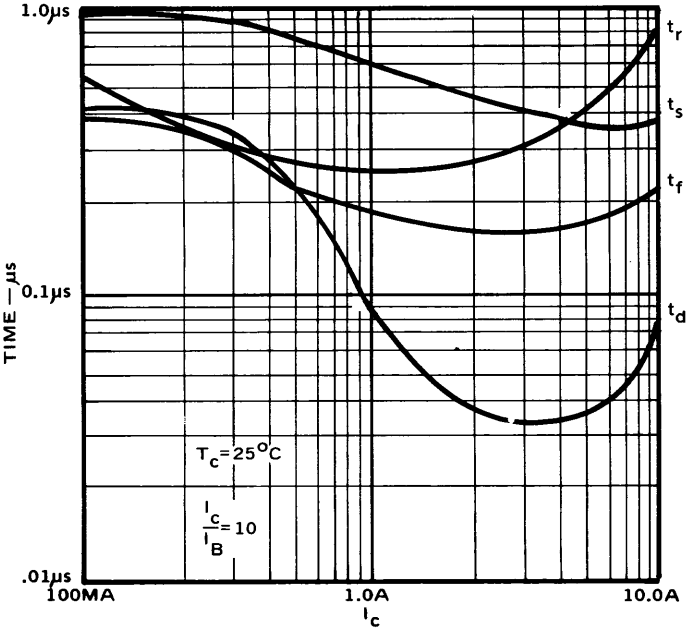
Typical V_{CE}(sat) vs I_C



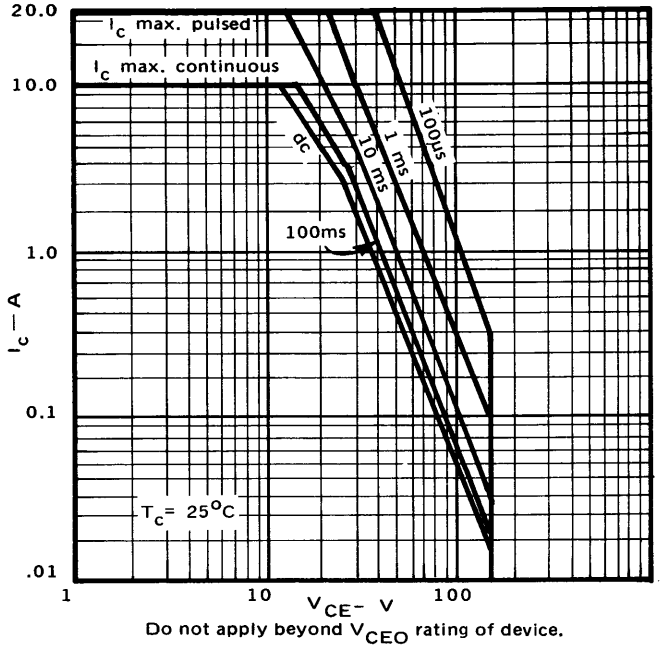
Typical V_{BE}(sat) vs I_C



Typical SWITCHING TIME vs I_C

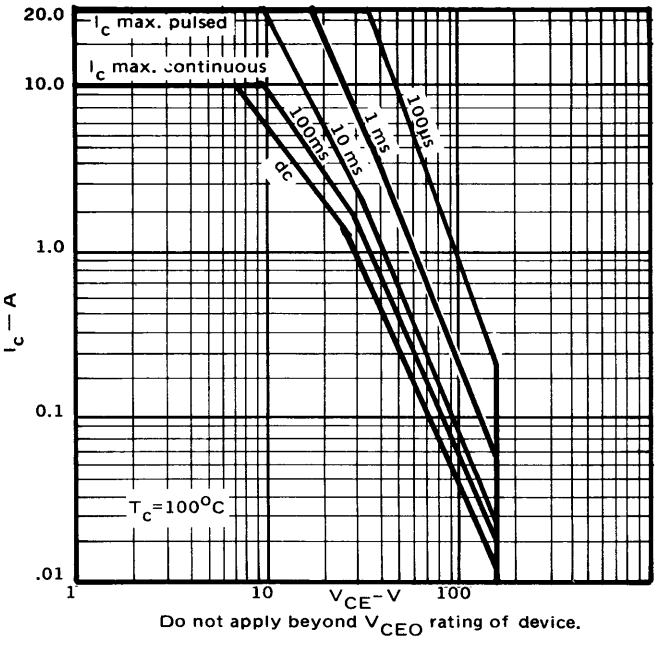


FORWARD-BIASED SOAR



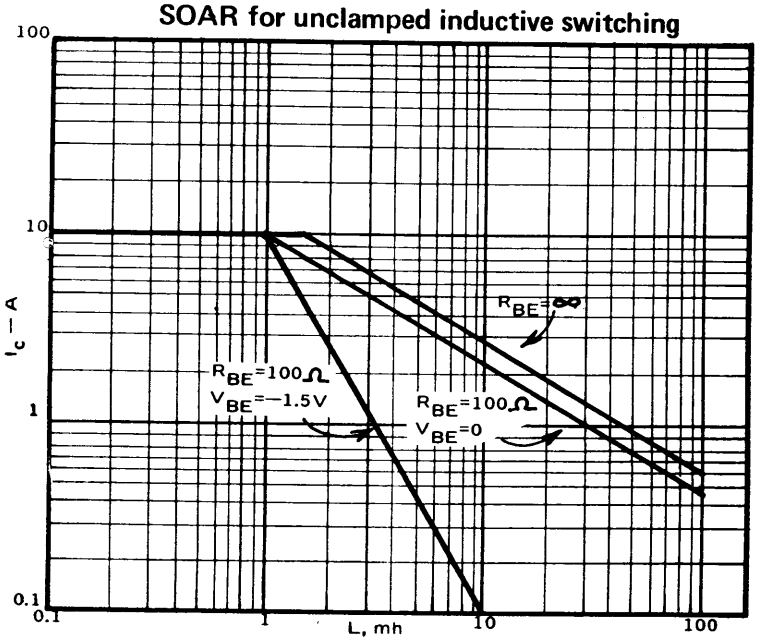
Do not apply beyond V_{CEO} rating of device.

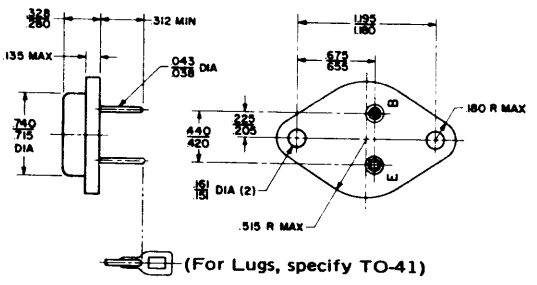
FORWARD-BIASED SOAR



Do not apply beyond V_{CEO} rating of device.

SOAR for unclamped inductive switching





TO–3

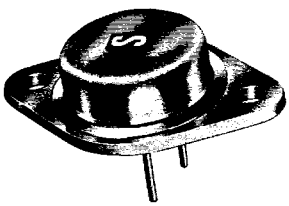
OUTLINE DRAWING

Solitron DEVICES, INC.
SEMICONDUCTOR GROUP
1177 BLUE HERON BLVD. • RIVIERA BEACH, FLA. 33404 • (305) 848-4311

2N6560
2N6562

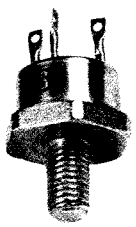
FAST SWITCHING

NPN SILICON POWER TRANSISTOR



TO-3

2N6560



TO-61/I

2N6562

ABSOLUTE MAXIMUM RATINGS

@ 25°C (unless otherwise noted)

PARAMETER	2N6560	2N6562	UNITS
V_{CBO}	450	450	V
V_{CEO} (sus)	450	450	V
V_{EBO}	5	5	V
I_C cont.	10	10	A
I_C pk.	15	15	A
I_B	2	2	A
P_T @ 100 °C.	125	100	W
T_J	–65 °C to +200 °C.		
T_S	–65 °C to +200 °C.		
Θ_{J-C}	0.8	1.0	°C/W

3-75-13

***ELECTRICAL CHARACTERISTICS:** T_C = 25 °C unless otherwise specified

SYMBOL	TEST CONDITIONS							LIMITS				UNITS
	DC COLLECTOR VOLTAGE (V)		DC EMITTER OR BASE VOLTAGE (V)		DC CURRENT (A)			2N6560		2N6562		
	V_{CB}	$-V_{CE}$	V_{EB}	V_{BE}	I_C	I_E	I_B	MIN	MAX	MIN	MAX	
V_{CEO}(sus)					0.1			450	—	450	—	V
I_{CEV}		450		−1.5				—	1.0	—	1.0	mA
I_{CEV} T_c = 100 °C		335		−1.5				—	1.0	—	1.0	mA
I_{EBO}			5.0					—	1.0	—	1.0	mA
h_{FE}		2.0			5.0			10	40	10	40	
		5.0			15			5	—	5	—	
V_{CE} (sat)					5.0		1.0	—	0.75	—	0.75	V
V_{CE} (sat)					10		2.0	—	1.0	—	1.0	V
V_{BE} (sat)					5.0		1.0	—	1.4	—	1.4	V
f_T f = 10 MHz		10			1.0			10	50	10	50	MHz
C_{obo} f = 1.0 MHz	10							100	450	100	450	pF
t_d		150[a]			5.0		1.0	—	0.1	—	0.1	μs
t_r		150[a]			5.0		1.0	—	0.5	—	0.5	μs
t_s		150[a]			5.0		1.0 1.0[b]	—	2.5	—	2.5	μs
t_f		150[a]			5.0		1.0 1.0[b]	—	0.5	—	0.5	μs
$\Theta_{J\text{-}C}$		10			10			—	0.8	—	1.0	°C/W

(a) V_{CC}

(b) I_{B_2}

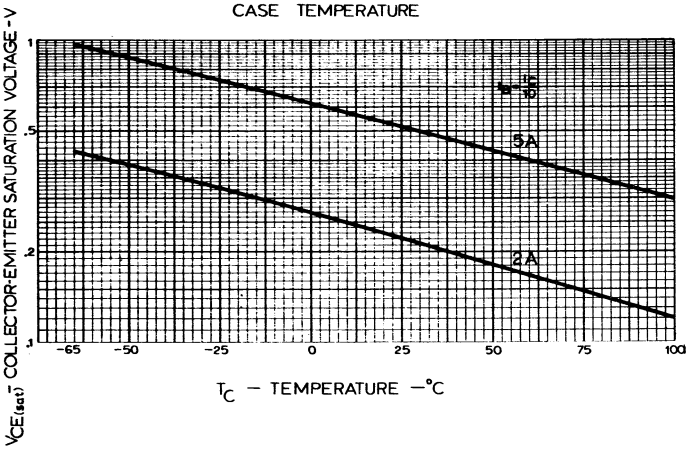
* IN ACCORDANCE WITH JEDEC REGISTRATION DATA FORMAT (J_c - 25 RDF - 1)

TYPICAL

COLLECTOR EMITTER SATURATION VOLTAGE

VS

CASE TEMPERATURE

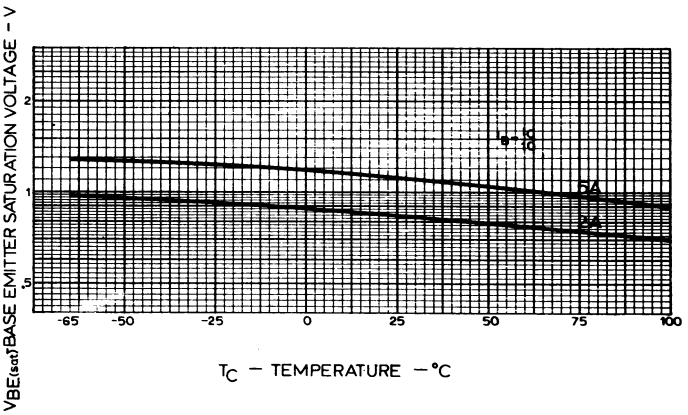


TYPICAL

BASE EMITTER SATURATION VOLTAGE

VS

CASE TEMPERATURE

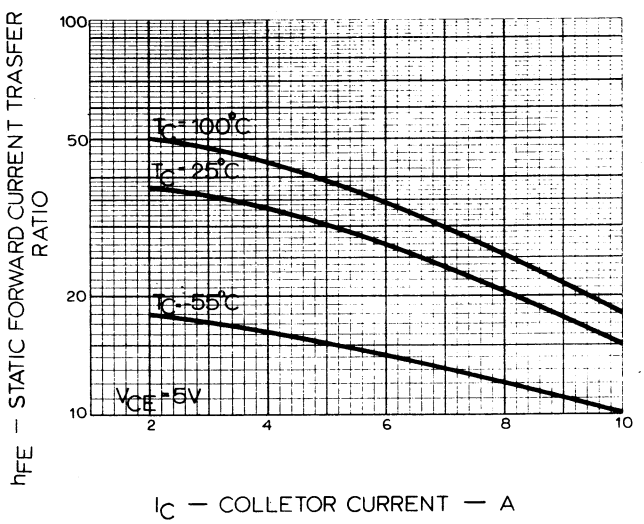


TYPICAL

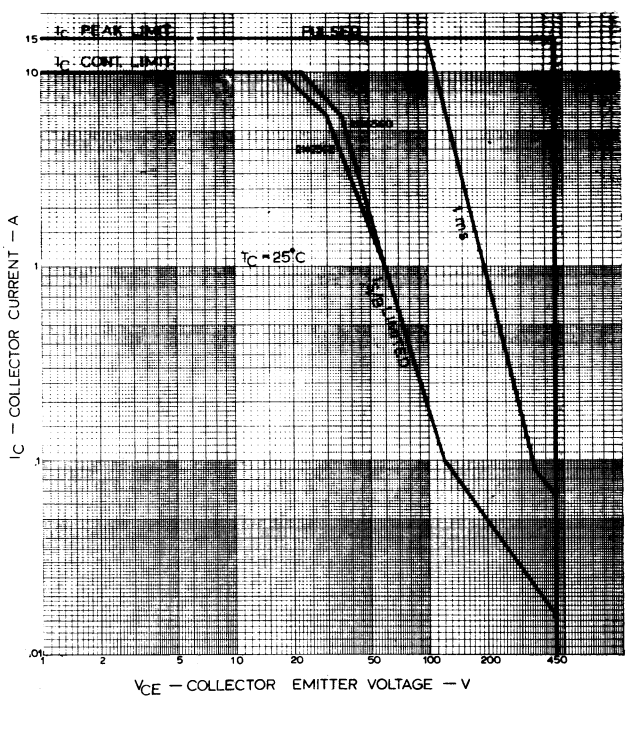
STATIC FORWARD CURRENT TRANSFER RATIO

VS

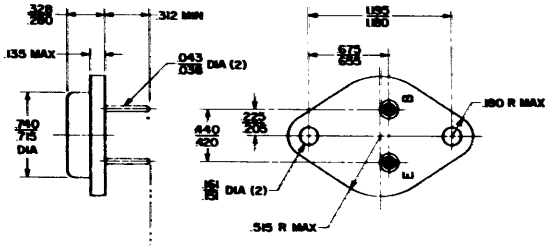
COLLECTOR CURRENT



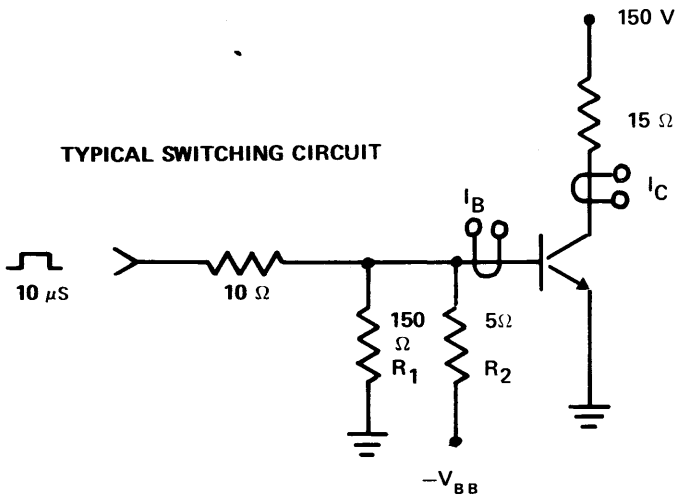
MAXIMUM OPERATING CONDITIONS



TO-3
OUTLINE DRAWING



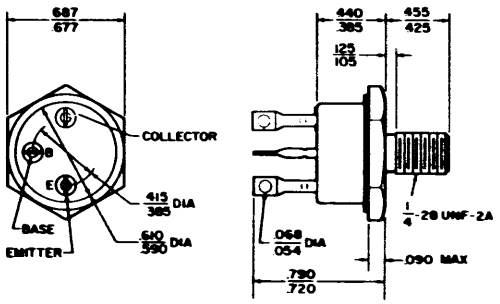
TYPICAL SWITCHING CIRCUIT



t_{ON} USE R_1 – DELETE R_2
t_S USE R_2 – DELETE R_1

$I_{B_1} = I_{B_2} = 1.0$ A

TO-61
OUTLINE DRAWING



SOLITRON FACILITIES

TAPPAN, N.Y. 10983
256 Oak Tree Road
Phone 914 / 359-5050
TWX 710 / 576-2654

RIVIERA BEACH, FLA. 33404
1177 Blue Heron Boulevard
Phone 305 / 848-4311
TWX 510 / 952-7610

PORT SALERNO, FLA. 33492
Cove Road, P.O. Box 278
Phone 305 / 287-5000
TWX 510 / 953-7500

SAN DIEGO, CALIF. 92100
8808 Balboa Avenue
Phone 714 / 278-8780
TWX 910 / 335-1221

JUPITER, FLA. 33458
1440 West Indiantown Road
Phone 305 / 746-8311

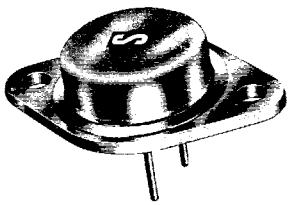
When you think of semiconductors . . . think Solitron!

Solitron DEVICES, INC.
SEMICONDUCTOR GROUP
1177 BLUE HERON BLVD. • RIVIERA BEACH, FLA. 33404 • (305) 848-4311

2N6561
2N6563

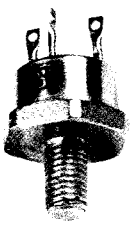
FAST SWITCHING

NPN SILICON POWER TRANSISTOR



TO-3

2N6561



TO-61/I

2N6563

ABSOLUTE MAXIMUM RATINGS

@ 25°C (unless otherwise noted)

PARAMETER	2N6561	2N6563	UNITS
V_{CBO}	300	300	V
V_{CEO} (sus)	300	300	V
V_{EBO}	5	5	V
I_C cont.	10	10	A
I_C pk.	20	20	A
I_B	2	2	A
P_T @ 100 °C.	125	100	W
T_J	–65 °C to +200 °C.		
T_S	–65 °C to +200 °C.		
Θ_{J-C}	0.8	1.0	°C/W

3-75-12

*ELECTRICAL CHARACTERISTICS: T_C = 25 °C unless otherwise specified

SYMBOL	TEST CONDITIONS							LIMITS				UNITS
	DC COLLECTOR VOLTAGE (V)		DC EMITTER OR BASE VOLTAGE (V)		DC CURRENT (A)			2N6561		2N6563		
	V_{CB}	V_{CE}	V_{EB}	V_{BE}	I_C	I_E	I_B	MIN	MAX	MIN	MAX	
V_{CEO}(sus)					0.1			300	—	300	—	V
I_{CEV}		300		−1.5				—	1.0	—	1.0	mA
I_{CEV} T_c = 100 °C		225		−1.5				—	1.0	—	1.0	mA
I_{EBO}			5.0					—	1.0	—	1.0	mA
h_{FE}		2.0			10			10	50	10	50	
		5.0			20			5	—	5	—	
V_{CE} (sat)					10		2.0	—	0.75	—	0.75	V
V_{CE} (sat)					10		1.0	—	1.0	—	1.0	V
V_{BE} (sat)					10		2.0	—	1.8	—	1.8	V
f_T f = 10 MHz		10			1.0			15	60	15	60	MHz
C_{obo} f = 1.0 MHz	10							100	450	100	450	pF
t_d		150[a]			5.0		1.0	—	0.1	—	0.1	μs
t_r		150[a]			5.0		1.0	—	0.5	—	0.5	μs
t_s		150[a]			5.0		1.0 1.0[b]	—	1.2	—	1.2	μs
t_f		150[a]			5.0		1.0 1.0[b]	—	0.5	—	0.5	μs
$\Theta_{J\text{-}C}$		10			10			—	0.8	—	1.0	°C/W

(a) V_{CC}

(b) I_{B_2}

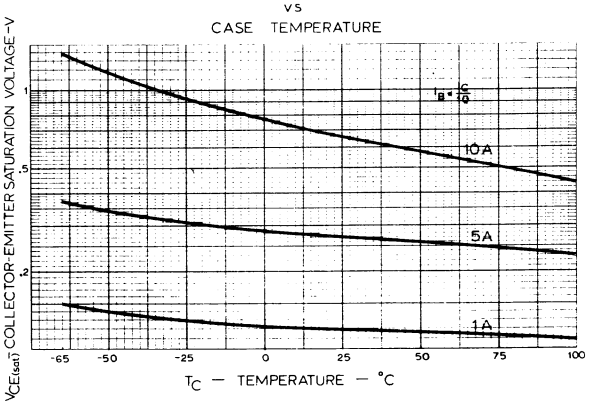
* IN ACCORDANCE WITH JEDEC REGISTRATION DATA FORMAT (J_c - 25 RDF - 1)

TYPICAL

COLLECTOR EMITTER SATURATION VOLTAGE

VS

CASE TEMPERATURE

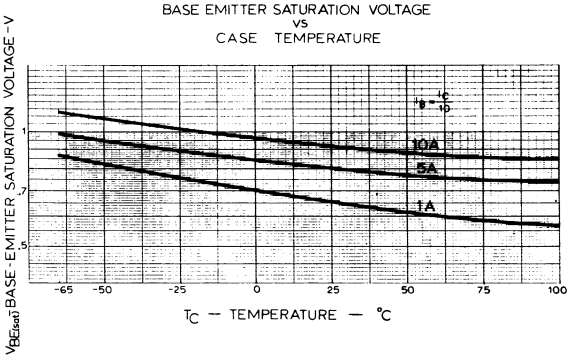


TYPICAL

BASE EMITTER SATURATION VOLTAGE

VS

CASE TEMPERATURE

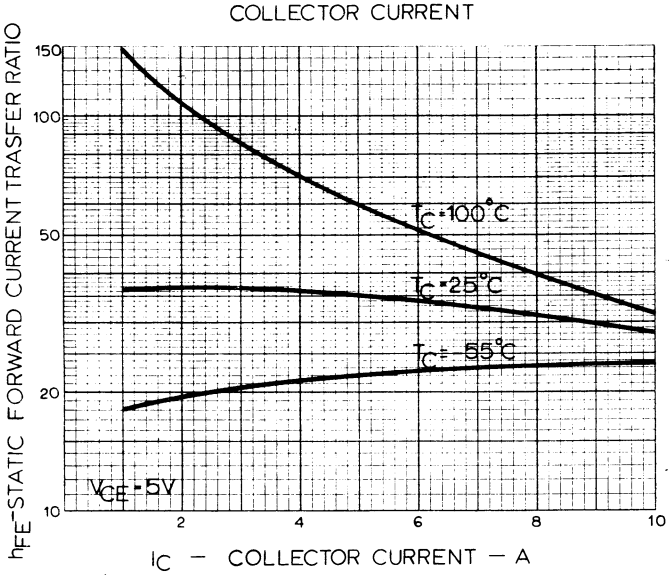


TYPICAL

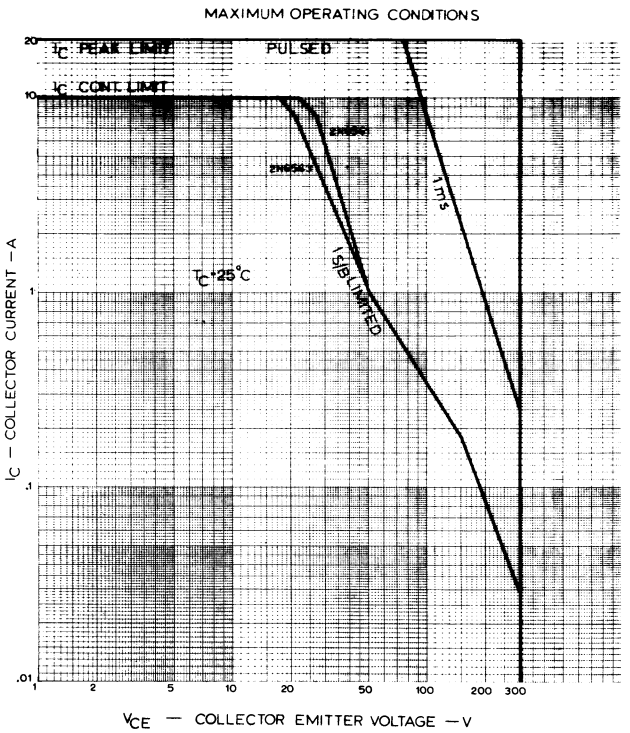
STATIC FORWARD CURRENT TRANSFER RATIO

VS

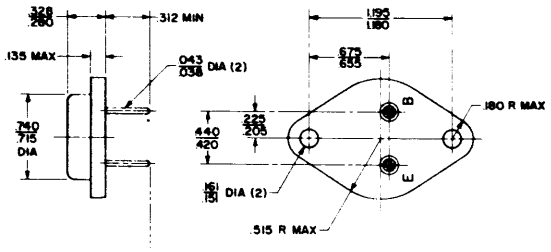
COLLECTOR CURRENT



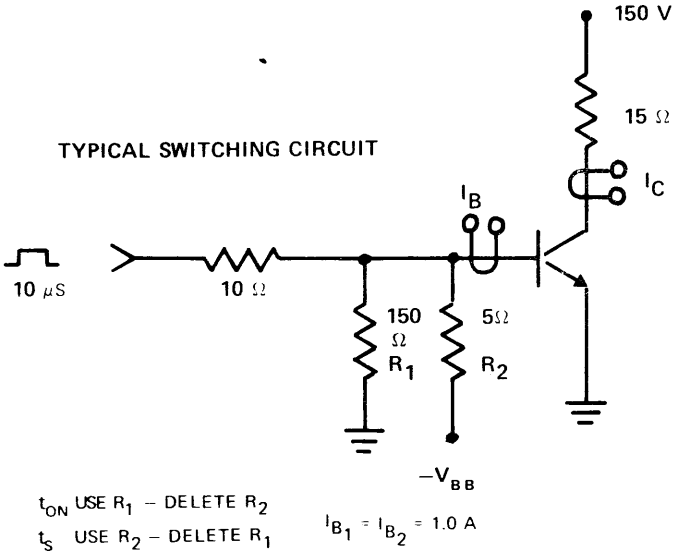
MAXIMUM OPERATING CONDITIONS



TO-3
OUTLINE DRAWING

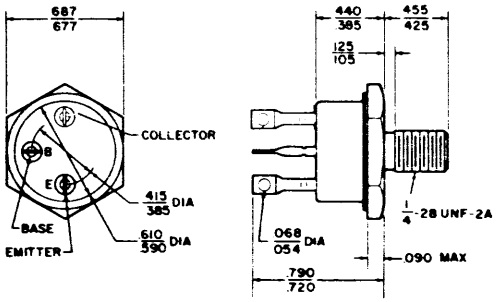


TYPICAL SWITCHING CIRCUIT



t_{ON} USE R_1 – DELETE R_2
t_S USE R_2 – DELETE R_1
$I_{B_1} = I_{B_2} = 1.0$ A

TO-61
OUTLINE DRAWING



SOLITRON FACILITIES

TAPPAN, N.Y. 10983
256 Oak Tree Road
Phone 914 / 359-5050
TWX 710 / 576-2654

Diodes & Rectifiers
Zeners
High Voltage Assemblies
Power Rectifiers
Thick Film Hybrid Circuits

RIVIERA BEACH, FLA. 33404
1177 Blue Heron Boulevard
Phone 305 / 848-4311
TWX 510 / 952-7610

Hi-rel Power Transistors (silicon)
Industrial/Commercial Power Transistors (silicon)
Power Hybrids (standard)
Custom Hybrids
Schottky & Planar Diodes
Semiconductor Die (silicon)

PORT SALERNO, FLA. 33492
Cove Road, P.O. Box 278
Phone 305 / 287-5000
TWX 510 / 953-7500

Precision RF Connectors
Cable Assemblies
Loads & Terminations
Strip Line Launchers
Couplers
Custom Strip Line Assemblies
Thin Film Microwave Products

SAN DIEGO, CALIF. 92100
8808 Balboa Avenue
Phone 714 / 278-8780
TWX 910 / 335-1221

CMOS Devices
FET & Dual FET Transistors
MOS Devices
MOS/FET Memory Arrays
Shift Registers
Diodes/Rectifiers
Zeners
High Voltage Rectifier Stacks

JUPITER, FLA. 33458
1440 West Indiantown Road
Phone 305 / 746-8311

When you think of semiconductors . . . think Solitron!