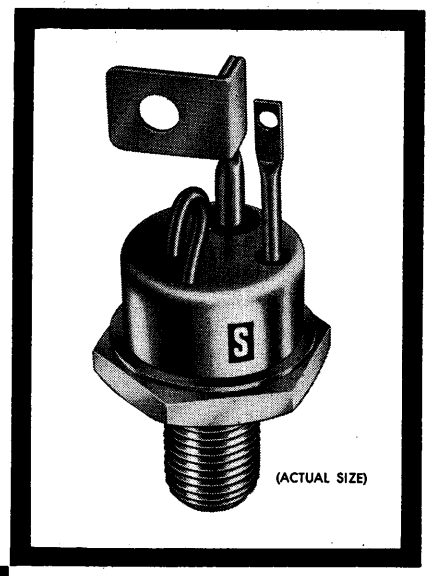

Solitron

announces a family of 90 Amp NPN Silicon Planar Power Transistors featuring fast switching, high voltage capabilities with P_T=350W @ 25°C!

Type Number	DESIGN LIMITS				PERFORMANCE SPECIFICATIONS					
	P_T	BV_{CBO}	$V_{CEO(SUS)}$	BV_{EBO}	h_{FE}		V_{BE} (sat)	V_{CE} (sat)	I_{CBO}	f_T
	Watts	Volts	Volts	Volts			Volts	Volts	μA	MHz
	25°C Case	I_C = 1mA	I_C = 0.2A	I_E = 1mA	I_C = 75A	I_C = 90A	I_C = 50A, I_B = 5A		V_{CB} = 60V	
	Max.	Min.	Min.	Min.	Min.	Min.	Max.	Max.	Max.	Typ.
MHT8920	350	80	60	8	10	5	2.0	1.5	10	20
MHT8921	350	100	80	8	10	5	2.0	1.5	10	20
MHT8922	350	120	100	8	10	5	2.0	1.5	10	20
MHT8923	350	140	120	8	10	5	2.0	1.5	10	20
	50°C Case	I_C = 2mA			I_C = 50A		I_C = 50A, I_B = 10A		V_{CB} = RATED	MIN.
2N3149	300	80	80	10	10	—	2.5	1.5	2000	0.1
2N3150	300	100	100	10	10	—	2.5	1.5	2000	0.1
2N3151	300	150	150	10	10	—	2.5	1.5	2000	0.1

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←Circle 50 on reader service card

Circle 51 on reader service card

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(TO–3)	(TO–3)	(TO–66)
2N3171	SDT3752	SDT3716
2N3172	SDT3753	SDT3717
2N3173	SDT3754	SDT3718
2N3174	SDT3755	SDT3719
	SDT3756	SDT3720

5 AMP

PNP INDUSTRIAL TRANSISTORS

ABSOLUTE MAXIMUM RATINGS

	2N3171	2N3172	2N3173	2N3174
BV_{CBO}	–40 V	–60 V	–80 V	–100 V
BV_{CEO}	–40 V	–60 V	–80 V	–100 V
BV_{EBO}	–10 V	–10 V	–10 V	–10 V
I_C(Max.)	–3 A	–3 A	–3 A	–3 A
I_B(Max.)	–1 A	–1 A	–1 A	–1 A
P_T(25°C Case)	75 W	75 W	75 W	75 W
Operating Junction Temperature	200°C			
Storage Temperature Range	–65°C to +200°C			

ELECTRICAL CHARACTERISTICS (25°C Ambient)

Static

SYMBOL	CONDITIONS	MIN.	MAX.	UNITS	TYPE
I_{CEX}	V_{CE}= Rated V_{CE}, V_{BE}= 1.5 V	–	–10	mA	All
	V_{CE}= ½ Rated V_{CE}, V_{BE}= 1.5V, T_C= 150°C	–	–1.0	mA	All
I_{CEO}	I_B= 0, V_{CE}= ½ Rated V_{CE}	–	–100	µA	All
I_{EBO}	V_{EB}= –10 V	–	–150	µA	All
V_{CEO}(sus)	I_B= 0, I_C= –100 mA	–40	–	Volts	2N3171
		–60	–	Volts	2N3172
		–80	–	Volts	2N3173
		–100	–	Volts	2N3174
h_{FE}	I_C= –1 A, V_{CE}= –3 V	12	36	–	All
	I_C= –200 mA, V_{CE}= –3 V	20	–	–	All
V_{CE}(sat)	I_C= –1 A, I_B= –140 mA	–	–.75	Volts	All
V_{BE}	I_C= –1 A, V_{CE}= –3 V	–	–1.8	Volts	All

Dynamic

h_{fe}	V_{CE}= –3 V, I_C= –1 A, f= 1 MHz	1.0	–	–	All

ADDITIONAL DEVICES

ABSOLUTE MAXIMUM RATINGS

	SDT3752 SDT3716	SDT3753 SDT3717	SDT3754 SDT3718	SDT3755 SDT3719	SDT3756 SDT3720
BV_{CBO}	−40 V	−60 V	−80 V	−100 V	−40 V
BV_{CEO}	−40 V	−60 V	−80 V	−100 V	−40 V
BV_{EBO}	−6 V	−6 V	−6 V	−6 V	−6 V
I_c(Max.)	−5 A	−5 A	−5 A	−5 A	−5 A
I_B(Max.)	−1 A	−1 A	−1 A	−1 A	−1 A
P_T(100°C Case) TO−66	16 W	16 W	16 W	16 W	16 W
P_T(100°C Case) TO−3	30 W	30 W	30 W	30 W	30 W
Operating Junction Temperature	200°C				
Storage Temperature Range	−65°C to +200°C				

ELECTRICAL CHARACTERISTICS (25°C Ambient)

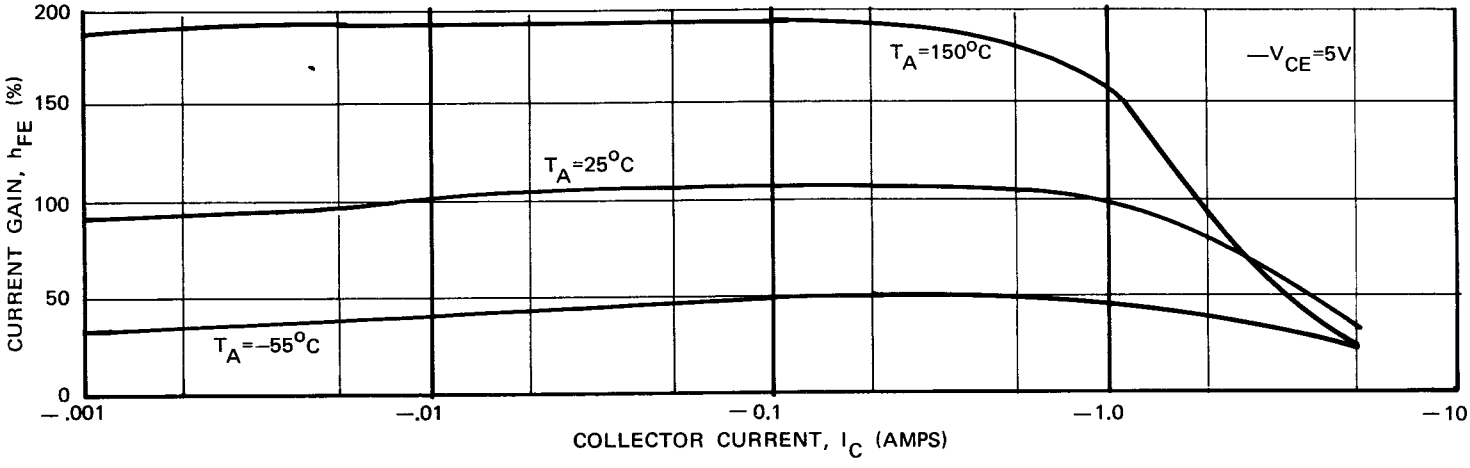
Static

SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	TYPE
I_{CEX}	V_{CE}= Rated V_{CB}, V_{BE}= 1.5 V	−	−	−1.0	mA	All
	V_{CE}= Rated V_{CB}, V_{BE}= 1.5V, T_c= 150°C	−	−	−10	mA	All
I_{CEO}	V_{CE}= ½ Rated V_{CE}, I_B= 0	−	−	−100	μA	All
I_{EBO}	V_{EB} [illegible] V	−	−	−100	μA	All
V_{CEO}(sus)	I_B= 0, I_c= −100 mA	−40	−	−	Volts	SDT3752, SDT3716 SDT3756, SDT3720
		−60	−	−	Volts	SDT3753, SDT3717
		−80	−	−	Volts	SDT3754, SDT3718
		−100	−	−	Volts	SDT3755, SDT3719
h_{FE}	I_c= −1 A, V_{CE}= −3 V	12	−	36	−	ALL BUT SDT3756, SDT3720
	I_c= −1 A, V_{CE}= −3 V	40	−	−	−	SDT3756, SDT3720
	I_c= −200 mA, V_{CE}= −3 V	20	−	−	−	All
V_{CE}(sat)	I_c= −1 A, I_B= −0.1 A	−	−	−0.4	Volts	All
V_{BE}(sat)	I_c= −1 A, I_B= −0.1 A	−	−	−1.0	Volts	All

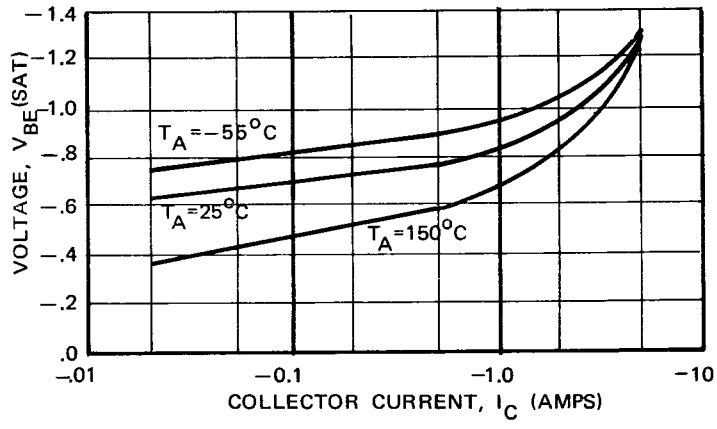
Dynamic

t_d	(see Figure No. 1)	−	2.0	−	Nsec	All
t_r	(see Figure No. 1)	−	75	−	Nsec	All
t_s	(see Figure No. 1)	−	500	−	Nsec	All
t_f	(see Figure No. 1)	−	100	−	Nsec	All
h_{fe}	V_{CE}= −10 V, I_c= −.5 A, f= 1 MHz	10	−	−	−	All
C_{obo}	V_{CB}= −10 V, I_E= 0, f= 1 MHz	−	−	150	pf	All

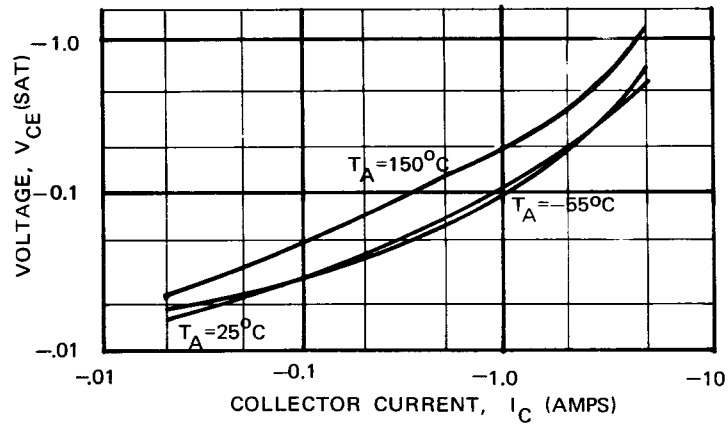
CHARACTERISTIC CURVES (ALL TYPES)



h_{FE} vs I_C

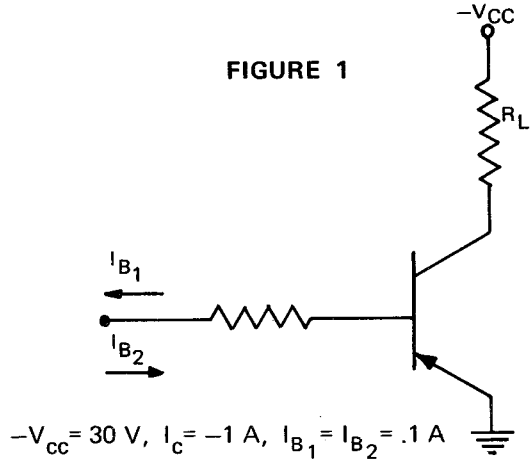


V_{BE}(sat) vs I_C

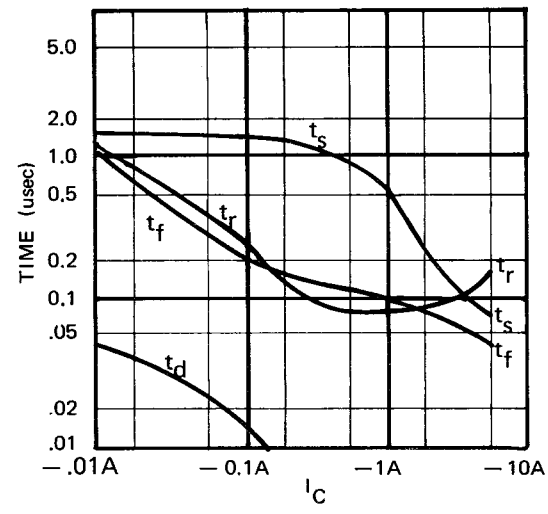


V_{CE}(sat) vs I_C

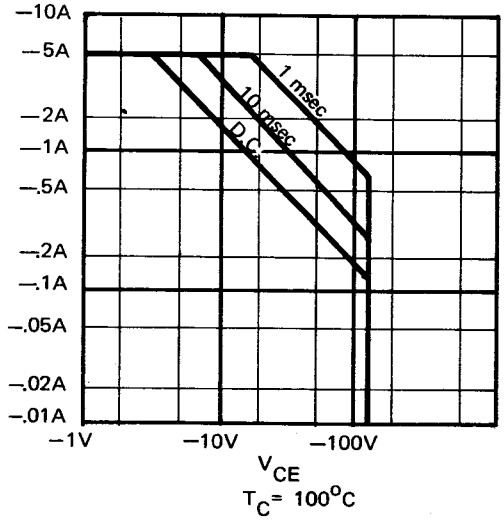
FIGURE 1

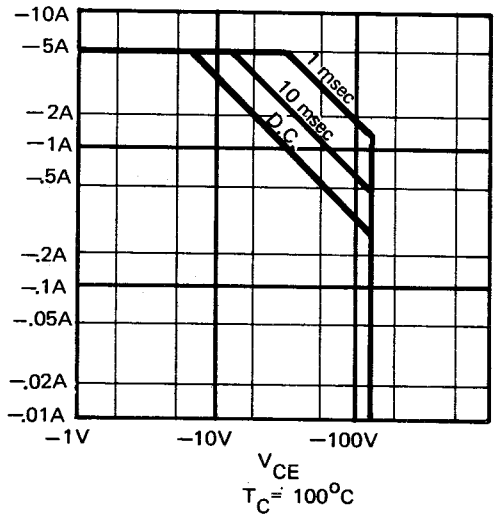


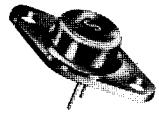
$-V_{cc}$= 30 V, I_c= –1 A, I_{B_1} = I_{B_2} = .1 A
R_L= 30 Ω



SWITCHING TIME vs I_C







TO–66

TO–3

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(TO–3)	(TO–3)	(TO–66)
2N3183	SDT3757	SDT3721
2N3184	SDT3758	SDT3722
2N3185	SDT3759	SDT3723
2N3186	SDT3760	SDT3724
	SDT3761	SDT3725

5 AMP

PNP INDUSTRIAL TRANSISTORS

ABSOLUTE MAXIMUM RATINGS

	2N3183	2N3184	2N3185	2N3186
BV_{CBO}	–40 V	–60 V	–80 V	–100 V
BV_{CEO}	–40 V	–60 V	–80 V	–100 V
BV_{EBO}	–10 V	–10 V	–10 V	– 10 V
I_C(Max.)	–5 A	–5 A	–5 A	–5 A
I_B(Max.)	–2 A	–2 A	–2 A	–2 A
P_T(25°C Case)	75 W	75 W	75 W	75 W
Operating Junction Temperature	200°C			
Storage Temperature Range	–65°C to +200°C			

ELECTRICAL CHARACTERISTICS (25°C Ambient)

Static

SYMBOL	CONDITIONS	MIN.	MAX.	UNITS	TYPE
I_{CEX}	V_{CE} = Rated V_{CE}, V_{BE} = 1.5 V	–	–10	mA	All
	V_{CE} = ½ Rated V_{CE}, V_{BE} = 1.5V, T_C = 150°C	–	–1.0	mA	All
I_{CEO}	I_B = 0, V_{CE} = ½ Rated V_{CE}	–	–100	µA	All
I_{EBO}	V_{EB} = –10 V	–	–150	µA	All
V_{CEO}(sus)	I_B = 0, I_C = –100 mA	–40	–	Volts	2N3183
		–60	–	Volts	2N3184
		–80	–	Volts	2N3185
		–100	–	Volts	2N3186
h_{FE}	I_C = –2 A, V_{CE} = –3 V	10	30	–	All
	I_C = –200mA, V_{CE} = –3 V	20	–	–	All
V_{CE}(sat)	I_C = –2 A, I_B = –300 mA	–	–1.0	Volts	All
V_{BE}	I_C = –2 A, V_{CE} = – 3 V	–	–2.0	Volts	All

Dynamic

h_{fe}	V_{CE} = –3 V, I_C = –2 A, f= 1 MHz	1.0	–	–	All

ADDITIONAL DEVICES

ABSOLUTE MAXIMUM RATINGS

	SDT3757 SDT3721	SDT3758 SDT3722	SDT3759 SDT3723	SDT3760 SDT3724	SDT3761 SDT3725
BV_{CBO}	−40 V	−60 V	−80 V	−100 V	−40 V
BV_{CEO}	−40 V	−60 V	−80 V	−100 V	−40 V
BV_{EBO}	−6 V	−6 V	−6 V	−6 V	−6 V
I_C(Max.)	−5 A	−5 A	−5 A	−5 A	−5 A
I_B(Max.)	−2 A	−2 A	−2 A	−2 A	−2 A
P_T(100°C Case) TO−66	16 W	16 W	16 W	16 W	16 W
P_T(100°C Case) TO−3	30 W	30 W	30 W	30 W	30 W
Operating Junction Temperature	200°C				
Storage Temperature Range	−65°C to +200°C				

ELECTRICAL CHARACTERISTICS (25°C Ambient)

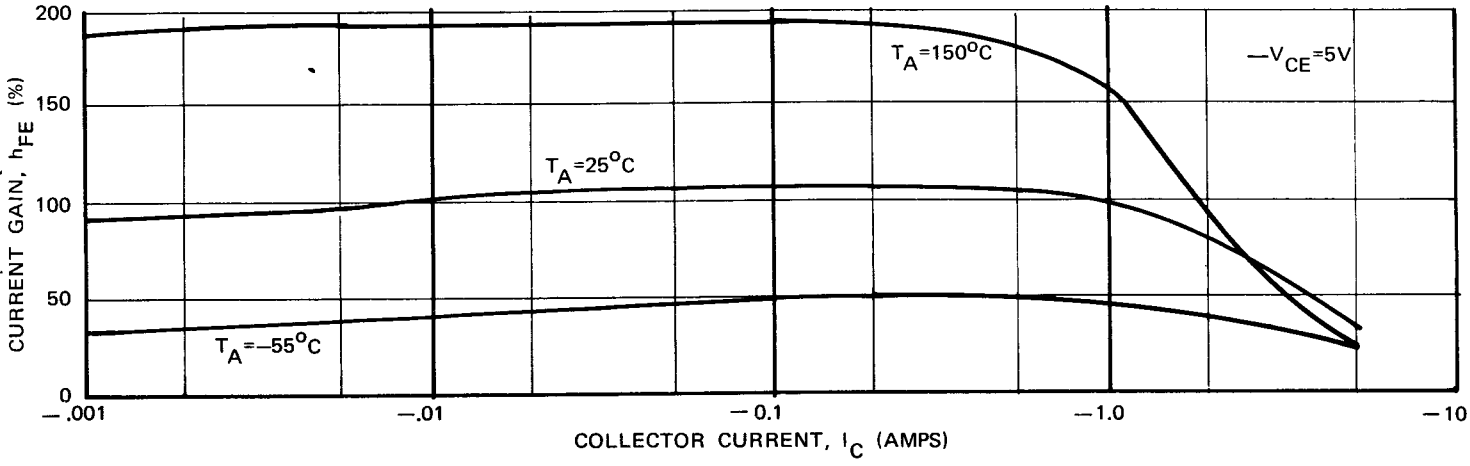
Static

SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	TYPE
I_{CEX}	V_{CE}= Rated V_{CB}, V_{BE}= 1.5 V	−	−	−1.0	mA	All
	V_{CE}= Rated V_{CB}, V_{BE}= 1.5V, T_c= 150°C	−	−	−10	mA	All
I_{CEO}	V_{CE}= ½ Rated V_{CE}, I_B= 0	−	−	−100	µA	All
I_{EBO}	V_{EB}= −6 V	−	−	−100	µA	All
V_{CEO}(sus)	I_B= 0, I_c= −100 mA	−40	−	−	Volts	SDT3757, SDT3721 SDT3761, SDT3725
		−60	−	−	Volts	SDT3758, SDT3722
		−80	−	−	Volts	SDT3759, SDT3723
		−100	−	−	Volts	SDT3760, SDT3724
h_{FE}	I_c= −2 A, V_{CE}= −3 V	10	−	30	−	ALL BUT SDT3761, SDT3725
	I_c= −2 A, V_{CE}= −3 V	40	−	−	−	SDT3761, SDT3725
	I_c= −200 mA, V_{CE}= −3 V	20	−	−	−	All
V_{CE}(sat)	I_c= −2 A, I_B= −0.2 A	−	−	−0.5	Volts	All
V_{BE}(sat)	I_c= −2 A, I_B= −0.2 A	−	−	−1.3	Volts	All

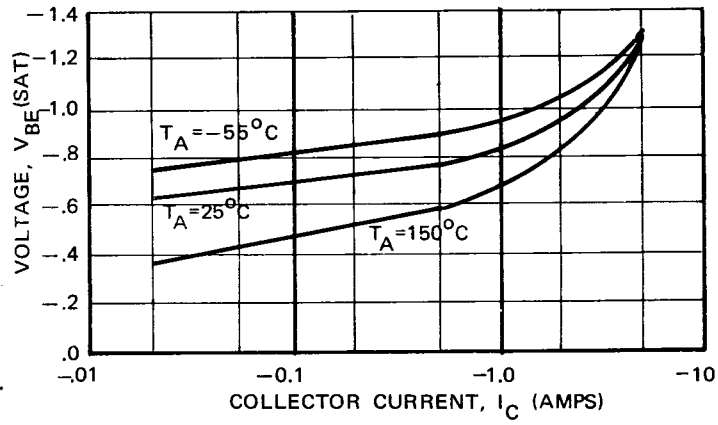
Dynamic

t_d	(see Figure No. 1)	−	2	−	Nsec	All
t_r	(see Figure No. 1)	−	90	−	Nsec	All
t_s	(see Figure No. 1)	−	225	−	Nsec	All
t_f	(see Figure No. 1)	−	80	−	Nsec	All
h_{fe}	V_{CE}= −10 V, I_c= −.5 A, f= 1 MHz	10	−	−	−	All
C_{obo}	V_{CB}= −10 V, I_E= 0, f= 1 MHz	−	−	150	pf	All

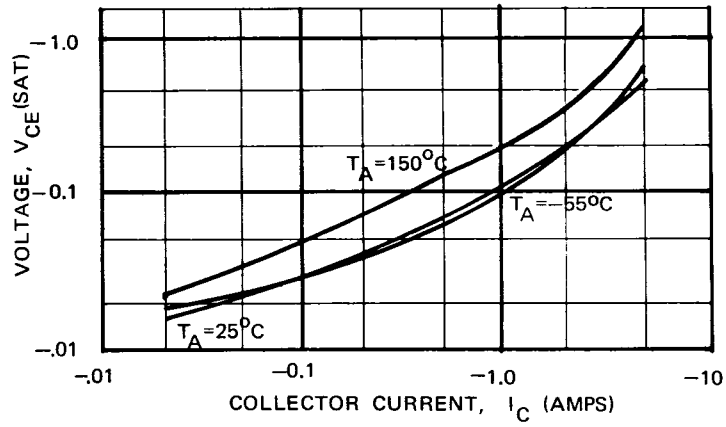
CHARACTERISTIC CURVES (ALL TYPES)



h_{FE} vs I_C

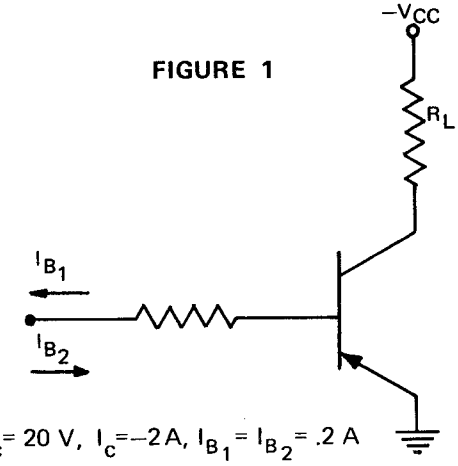


V_{BE}(sat) vs I_C

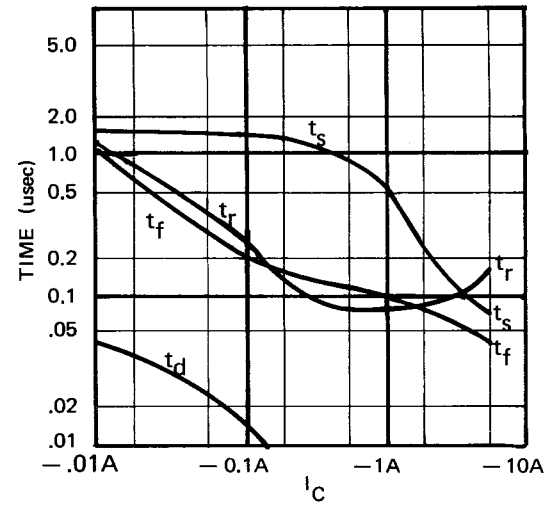


V_{CE}(sat) vs I_C

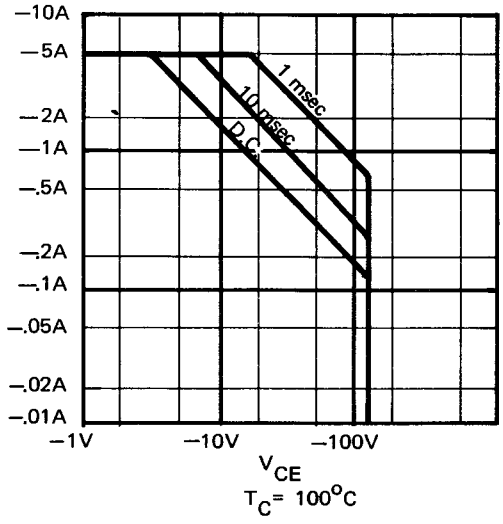
FIGURE 1

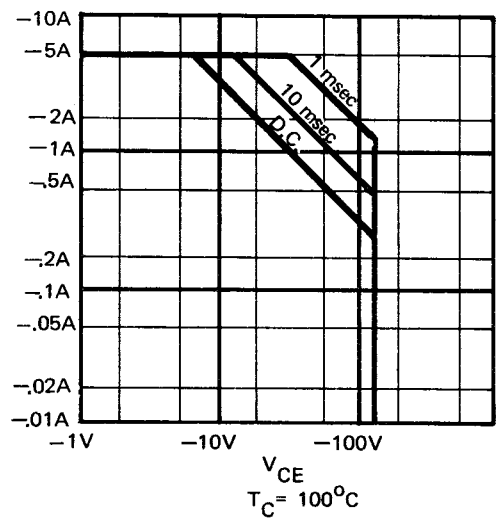


$-V_{cc}$= 20 V, I_c=–2A, I_{B_1}= I_{B_2}= .2 A
R_L= 10Ω



SWITCHING TIME vs I_C





TO–66

TO–3

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(TO–3)	(TO–3)	(TO–66)
2N3195	SDT3762	SDT3729
2N3196	SDT3763	SDT3730
2N3197	SDT3764	SDT3731
2N3198	SDT3765	SDT3732
	SDT3766	SDT3733

5 AMP

PNP INDUSTRIAL TRANSISTORS

ABSOLUTE MAXIMUM RATINGS

	2N3195	2N3196	2N3197	2N3198
BV_{CBO}	–40 V	–60 V	–80 V	–100 V
BV_{CEO}	–40 V	–60 V	–80 V	–100 V
BV_{EBO}	–10 V	–10 V	–10 V	–10 V
I_C(Max.)	– 5 A	– 5 A	– 5 A	– 5 A
I_B(Max.)	– 2 A	– 2 A	– 2 A	– 2 A
P_T(25°C Case)	75 W	75 W	75 W	75 W
Operating Junction Temperature	200°C			
Storage Temperature Range	–65°C to +200°C			

ELECTRICAL CHARACTERISTICS (25°C Ambient)

Static

SYMBOL	CONDITIONS	MIN.	MAX.	UNITS	TYPE
I_{CEX}	V_{CE}= Rated V_{CE}, V_{BE}= 1.5 V	–	–10	mA	All
	V_{CE}= ½ Rated V_{CE}, V_{BE}= 1.5 V, T_c= 150°C	–	– 1.0	mA	All
I_{CEO}	V_{CE}= ½ Rated V_{CE}, I_B= 0	–	–100	µA	All
I_{EBO}	V_{EB}= –10 V	–	–150	µA	All
V_{CEO}(sus)	I_B= 0, I_c= –100 mA	–40	–	Volts	2N3195
		–60	–	Volts	2N3196
		–80	–	Volts	2N3197
		–100	–	Volts	2N3198
h_{FE}	I_c= –3 A, V_{CE}= –3 V	10	30	–	All
	I_c= –300 mA, V_{CE}= –3 V	20	–	–	All
V_{CE}(sat)	I_c= –3 A, I_B= –600 mA	–	–0.9	Volts	All
V_{BE}	I_c= –3 A, V_{CE}= –3 V	–	–1.9	Volts	All

Dynamic

h_{fe}	V_{CE}= –3 V, I_c= –3 A, f= 1 MHz	1.0	–	–	All

ADDITIONAL DEVICES

ABSOLUTE MAXIMUM RATINGS

	SDT3762 SDT3729	SDT3763 SDT3730	SDT3764 SDT3731	SDT3765 SDT3732	SDT3766 SDT3733
BV_{CBO}	−40 V	−60 V	−80 V	−100 V	−40 V
BV_{CEO}	−40 V	−60 V	−80 V	−100 V	−40 V
BV_{EBO}	−6 V	−6 V	−6 V	−6 V	−6 V
I_C(Max.)	−5 A	−5 A	−5 A	−5 A	−5 A
I_B(Max.)	−2 A	−2 A	−2 A	−2 A	−2 A
P_T(100°C Case) TO-66	16 W	16 W	16 W	16 W	16 W
P_T(100°C Case) TO-3	30 W	30 W	30 W	30 W	30 W
Operating Junction Temperature			200°C		
Storage Temperature Range			−65°C to +200°C		

ELECTRICAL CHARACTERISTICS (25°C Ambient)

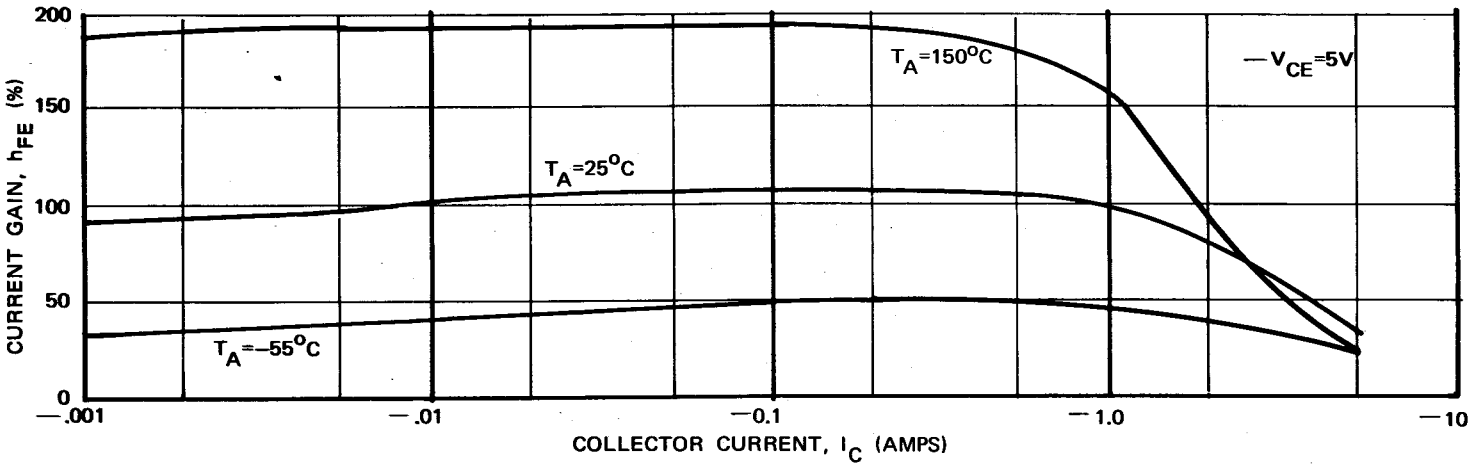
Static

SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	TYPE
I_{CEX}	V_{CE}= Rated V_{CB}, V_{BE}= 1.5 V	−	−	−1.0	mA	All
	V_{CE}= Rated V_{CB}, V_{BE}= 1.5 V, T_C= 150°C	−	−	−1.0	mA	All
I_{CEO}	V_{CE}= ½ Rated V_{CE}, I_B= 0	−	−	−100	μA	All
I_{EBO}	V_{EB}= −6 V	−	−	−100	μA	All
V_{CEO}(sus)	I_B= 0, I_C= −100 mA	−40	−	−	Volts	SDT3729, SDT3762 SDT3733, SDT3766
		−60	−	−	Volts	SDT3730, SDT3763
		−80	−	−	Volts	SDT3731, SDT3764
		−100	−	−	Volts	SDT3732, SDT3765
h_{FE}	I_C= −3 A, V_{CE}= −3 V	10	−	30	−	ALL EXCEPT SDT3733, SDT3766
	I_C= −300 mA, V_{CE}= −3 V	20	−	−	−	ALL EXCEPT SDT3733 SDT3766
	I_C= −3A, V_{CE}= −3 V	40	−	−	−	SDT3733 SDT3766
V_{CE}(sat)	I_C= −3 A, I_B= −.3 A	−	−	.75	Volts	All
V_{BE}(sat)	I_C= −3 A, I_B= −.3 A	−	−	1.5	Volts	All

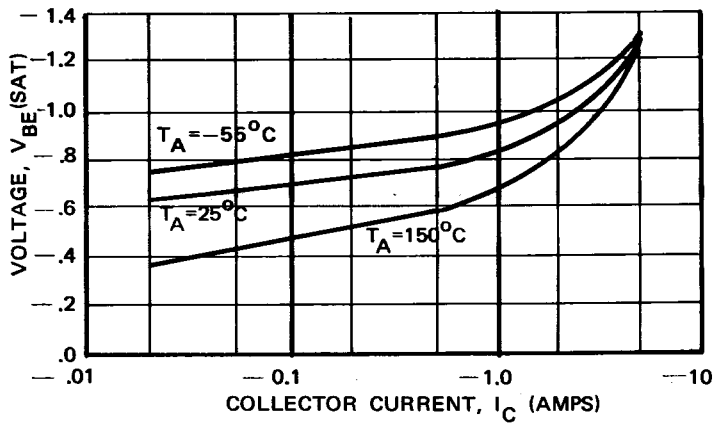
Dynamic

t_d	(See Figure No. 1)	−	1	−	Nsec	All
t_r	(See Figure No. 1)	−	120	−	Nsec	All
t_s	(See Figure No. 1)	−	130	−	Nsec	All
t_f	(See Figure No. 1)	−	70	−	Nsec	All
h_{fe}	V_{CE}= −10 V, I_C= −.5 A, f= 1 MHz	10	−	−	−	All
C_{obo}	V_{CB}= −10 V, I_E= 0, f= 1 MHz	−	−	150	pf	All

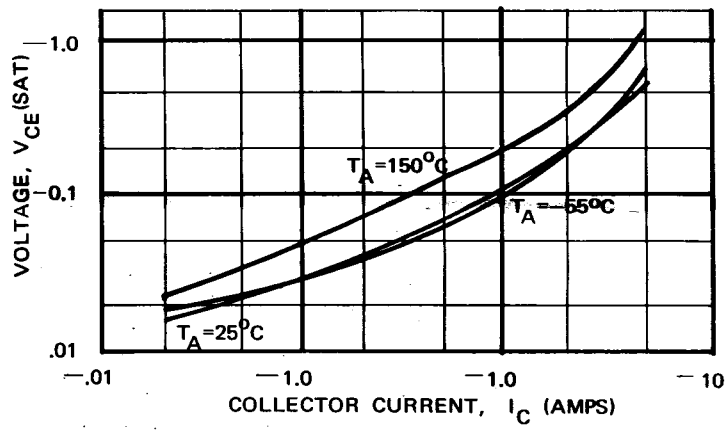
CHARACTERISTIC CURVES (ALL TYPES)



h_{FE} vs I_C

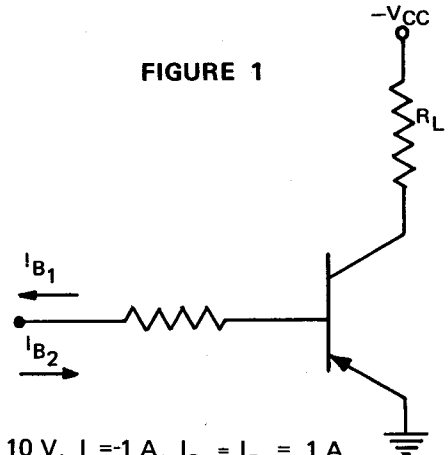


V_{BE}(sat) vs I_C

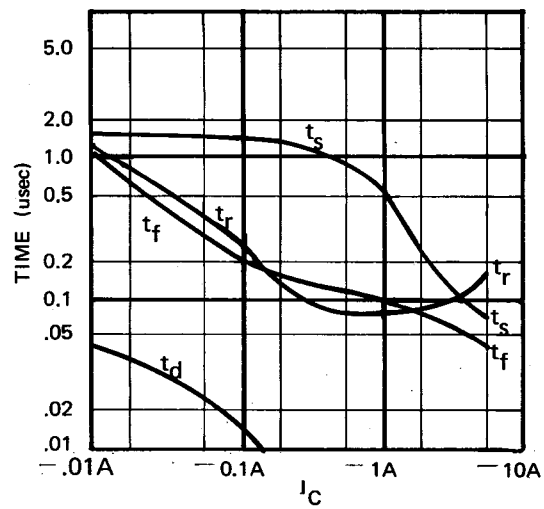


V_{CE}(sat) vs I_C

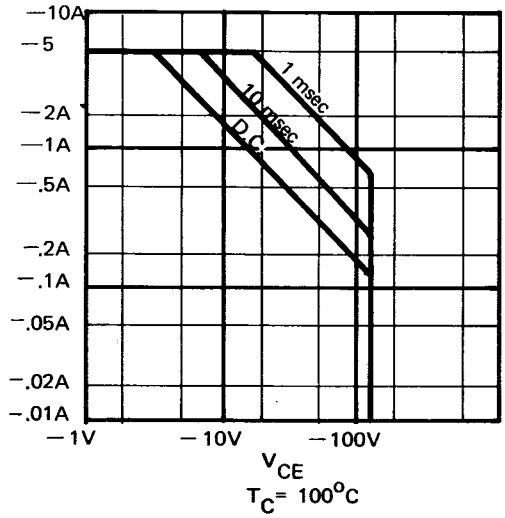
FIGURE 1

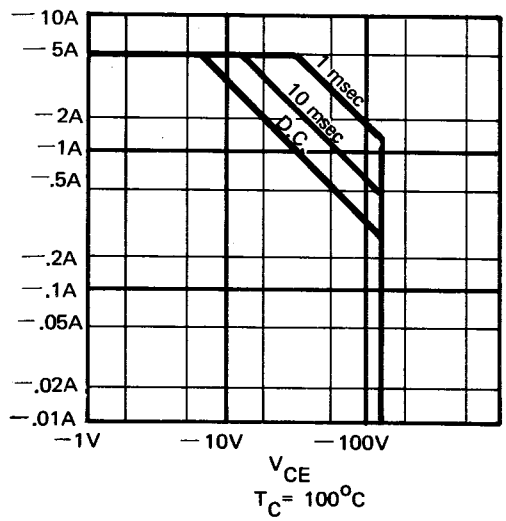


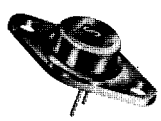
$-V_{cc}$= 10 V, I_c=-1 A, I_{B_1} = I_{B_2} = .1 A
R_L= 10 Ω



SWITCHING TIME vs I_C







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(TO–5)	(TO–5)	(TO–66)
2N3202	SDT3775	SDT3712
2N3203	SDT3776	SDT3713
2N3204	SDT3777	SDT3714
	SDT3778	SDT3715

5 AMP

PNP INDUSTRIAL TRANSISTORS

ABSOLUTE MAXIMUM RATINGS

	2N3202	2N3203	2N3204
BV_{CBO}	–40 V	–60 V	–80 V
BV_{CEO}	–40 V	–60 V	–80 V
BV_{EBO}	–10 V	–10 V	–10 V
I_c(Max.)	–3 A	–3 A	–3 A
I_B(Max.)	–1.5 A	–1.5 A	–1.5 A
P_T(25°C Case)	8.75W	8.75W	8.75W
Operating Junction Temperature	200°C		
Storage Temperature Range	–65°C to +200°C		

ELECTRICAL CHARACTERISTICS (25°C Ambient)

Static

SYMBOL	CONDITIONS	MIN.	MAX.	UNITS	TYPE
I_{CEX}	V_{CE}= Rated, V_{CE}, V_{BE}= 1.5 V	–	–75	µA	All
	V_{CE}= ½ Rated V_{CE}, V_{BE}= 1.5 V, T_c= 150°C	–	–250	µA	All
I_{CEO}	I_B= 0, V_{CE}= ½ Rated V_{CE}	–	–100	µA	All
I_{EBO}	V_{EB}= –10 V	–	–50	µA	All
V_{CEO}(sus)	I_B= 0, I_c= –50 mA	–40	–	Volts	2N3202
		–60	–	Volts	2N3203
		–80	–	Volts	2N3204
h_{FE}	I_c= –1 A, V_{CE}= – 2 V	20	60	–	All
	I_c= –0.5 A, V_{CE}= –2 V	30	–	–	All
V_{CE}(sat)	I_c= –1 A, V_{CE}= –0.1 A	–	–0.3	Volts	All
V_{BE}	I_c= –1 A, V_{CE}= –3 V	–	–1.3	Volts	All

Dynamic

h_{fe}	V_{CE}= –2 V, I_c= –1A, f= 1 MHz	1.0	–	–	All

ADDITIONAL DEVICES

ABSOLUTE MAXIMUM RATINGS

	SDT3712 SDT3775	SDT3713 SDT3776	SDT3714 SDT3777	SDT3715 SDT3778
V_{CBO}	–40 V	–60 V	–80 V	–40 V
V_{CEO}	–40 V	–60 V	–80 V	–40 V
V_{EBO}	–6 V	–6 V	–6 V	–6 V
I_C(Max.)	–5 A	–5 A	–5 A	–5 A
I_B(Max.)	–2 A	–2 A	–2 A	–2 A
P_T(100°C Case) TO-5	4 W	4 W	4 W	4 W
P_T(100°C Case) TO-66	16 W	16 W	16 W	16 W
Operating Junction Temperature	200°C			
Storage Temperature Range	–65°C to +200°C			

ELECTRICAL CHARACTERISTICS (25°C Ambient)

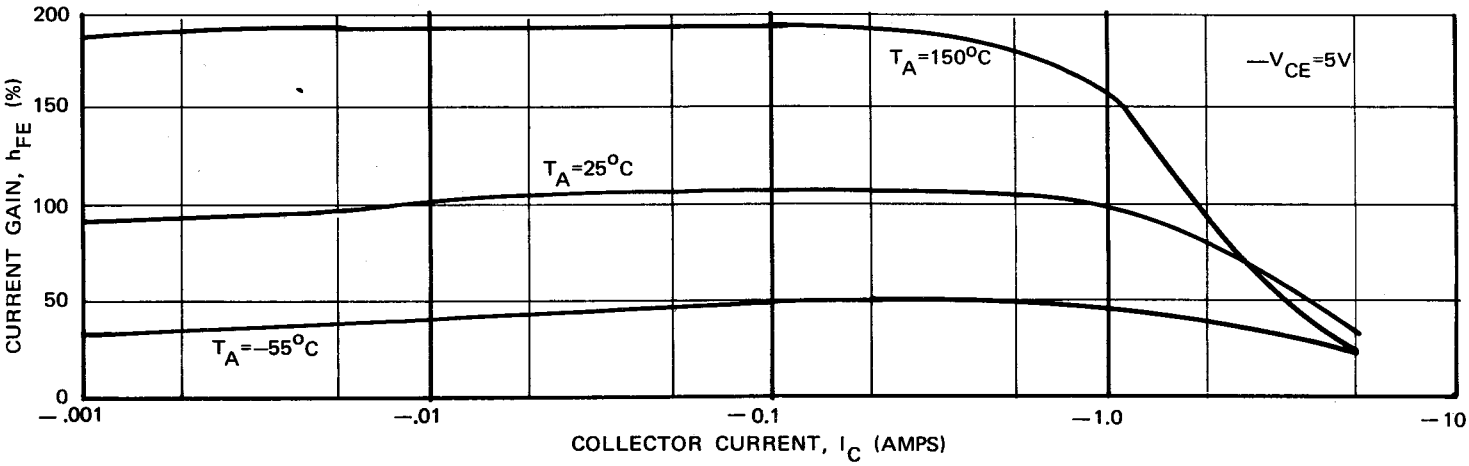
Static

SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	TYPE
I_{CEX}	V_{CE}= Rated V_{CE}, V_{BE}= 1.5 V	–	–	–75	μA	All
	V_{CE}= ½ Rated V_{CE}, T_c= 150°C	–	–	–250	μA	All
I_{CEO}	I_B= 0, V_{CE}= ½ Rated V_{CE}	–	–	–100	μA	All
I_{EBO}	V_{EB}= –6 V	–	–	–50	μA	All
V_{CEO}(sus)	I_B= 0, I_c= –50 mA	–40	–	–	Volts	SDT3775, SDT3712 SDT3778, SDT3715
		–60	–	–	Volts	SDT3776, SDT3713
		–80	–	–	Volts	SDT3777, SDT3714
h_{FE}	I_c= –2 A, V_{CE}= –2 V	20	–	60	–	All
	I_c= –0.5 A, V_{CE}= –2 V	30	–	–	–	All
V_{CE}(sat)	I_c= –1 A, I_B= –0.1 A	–	–	–0.3	Volts	All
V_{BE}(sat)	I_c= –1 A, I_B= –0.1 A	–	–	–1.1	Volts	All

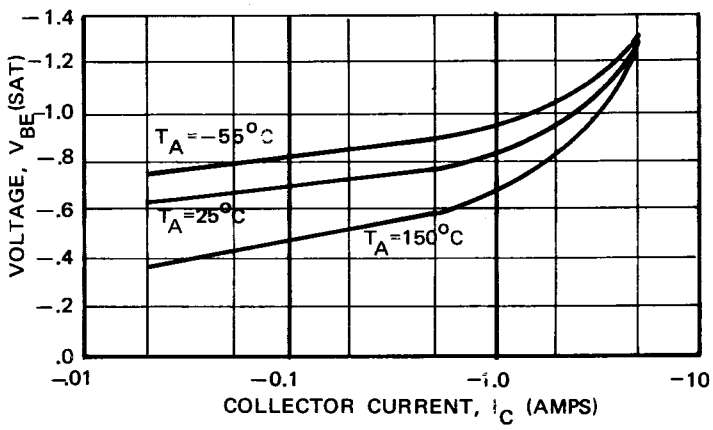
Dynamic

t_d	(See Figure No. 1)	–	1	–	Nsec	All
t_r	(See Figure No. 1)	–	100	–	Nsec	All
t_s	(See Figure No. 1)	–	180	–	Nsec	All
t_f	(See Figure No. 1)	–	75	–	Nsec	All
h_{fe}	V_{CE}= –2 V, I_c= –1 A, f= 1 MHz	10	–	–	–	All
C_{obo}	V_{CB}= –10 V, I_E= 0, f- 1 MHz	–	–	150	pf	All

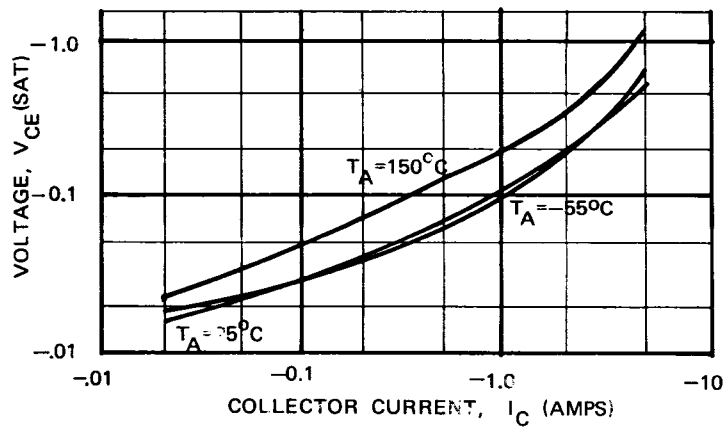
CHARACTERISTIC CURVES (ALL TYPES)



h_{FE} vs I_C

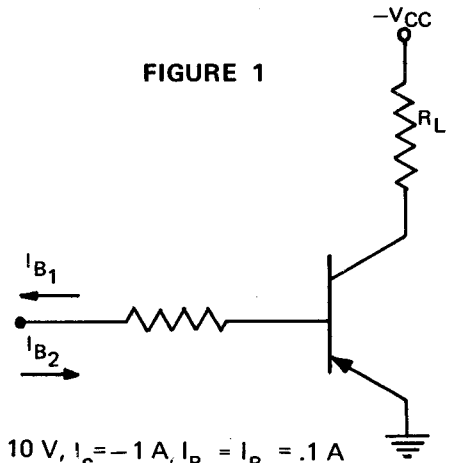


V_{BE}(sat) vs I_C

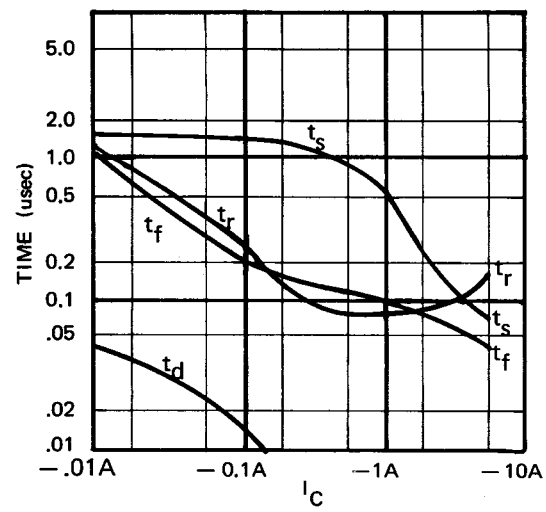


V_{CE}(sat) vs I_C

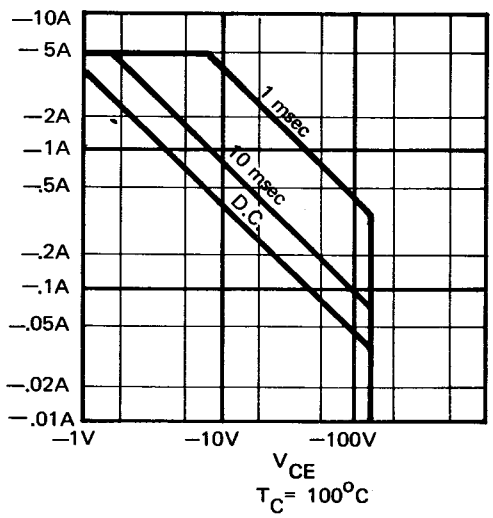
FIGURE 1

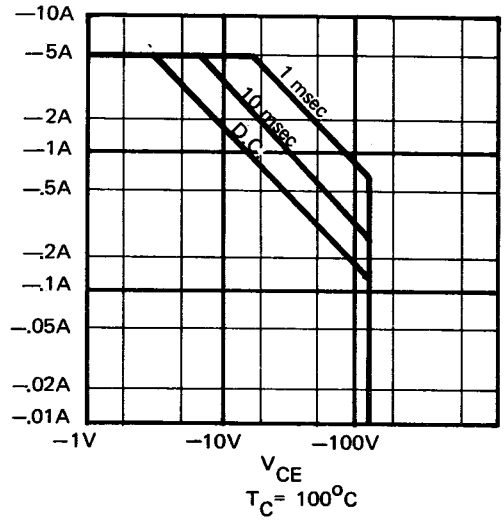


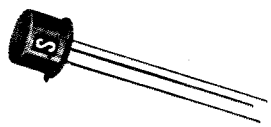
$-V_{CC}$= 10 V, I_C=−1 A, I_{B_1} = I_{B_2} = .1 A
R_L= 10 Ω



SWITCHING TIME vs I_C







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