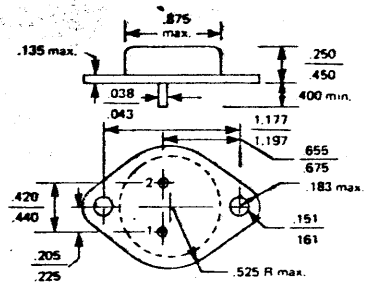
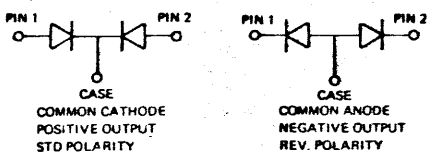
Silicon Very Fast Recovery Rectifiers and Center Tap Configurations

MECHANICAL DATA



CONFORMS TO JEDEC OUTLINE TO-3
ALL DIMENSIONS IN INCHES

NOTES:
- STANDARD POLARITY IS CATHODE COMMON TO CASE
- ADD SUFFIX LTR "R" FOR ANODE COMMON TO CASE
- SUES2601 SERIES ARE DUAL CHIP CENTER TAP DEVICES WITH CASE COMMON



SUES 601 THRU SUES 606

SUES 2601 THRU SUES 2606

FEATURES

- 30A SINGLE/30A DUALS
- LOW V_F
- HIGH SURGE
- LOW LEAKAGE
- P.I.V. TO 400 VOLTS
- VERY FAST

MAXIMUM RATINGS

I_F (Ave.)	I_{FSM} (Surge) 8.3 mSec-60 Hz	$V_{RM(rep)}$, $V_{RM(wkg)}$, V_R in VOLTS								Case Style
	Amperes	50	75	100	125	150	200	300	400	
30	1000	SUES601		SUES602		SUES603	SUES604	SUES605	SUES606	TO3
30	500	SUES2601		SUES2602		SUES2603	SUES2604	SUES2605	SUES2606	TO3

ELECTRICAL CHARACTERISTICS

DEVICE CHARACTERISTIC	Symbol	Max. Value	Unit
SUES601 thru SUES606			
D.C. Forward Voltage (I_F = 30 Adc, Tc = 25°C & 125°C, 601 thru 603)	V_F	.915/.800	Volts
(I_F = 30 Adc, Tc = 25°C & 125°C, 604 thru 607)	V_F	1.20/1.10	Volts
D.C. Reverse Current (@ Rated V_R, T_C = 25°C & 125°C, 601 thru 603)	I_R	25 μA/10mA	–
(@ Rated V_R, T_C = 25°C & 125°C, 604 thru 606)	I_R	70 μA/30mA	–
SUES2601 thru SUES2606			
D.C. Forward Voltage (I_F = 15 Adc, T_C = 25°C & 125°C, 2601 thru 2603)	V_F	.930/.825	Volts
(I_F = 15Adc, T_C = 25°C & 125°C, 2604 thru 2605)	V_F	1.25/1.15	Volts
D.C. Reverse Current (@ rated V_R, T_C = 25°C & 125°C, 2601 thru 2603)	I_R	20μA/4mA	–
(@ rated V_R, T_C = 25°C & 125°C, 2604 thru 2606)	I_R	50μA/10mA	–
Ratings are per cell – output is 30 amps CT			

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Junction Operating Temp. Range	T_J	–65 to +175	°C
Maximum Storage Temperature Range	T_{STG}	–65 to +175	°C

*SUES601-6 T_{rr} 50 nsec max., C_j TYP 450 pf @ 10 V
*SUES2601-3 T_{rr} 35 nsec max., C, TYP 200 pf @ 10 V
*SUES2604-6 T_{rr} 50 nsec max., C_j, TYP 100 pf @ 10 V
I_F = 1/2 A, I_R = 1.0 A, I_{REC} = 1/4 A

Semicon INC.

SEMICONDUCTOR DEVICES

AURIEMA GMBH

Uhdestraße 31-33 · Postfach 1108
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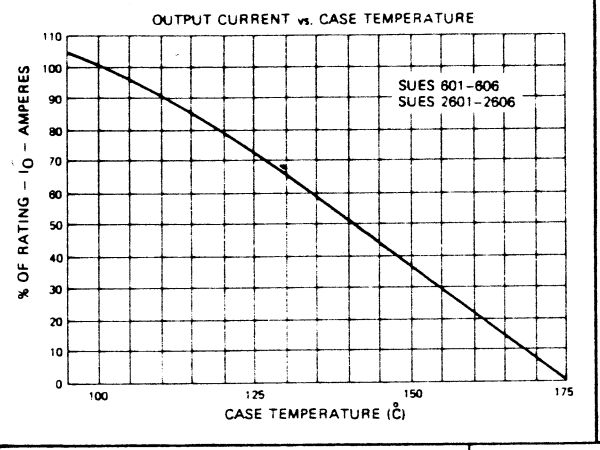
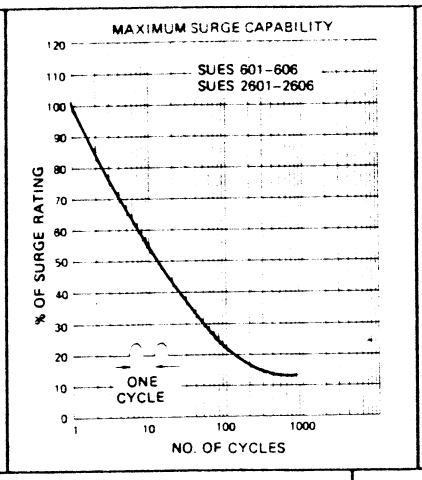
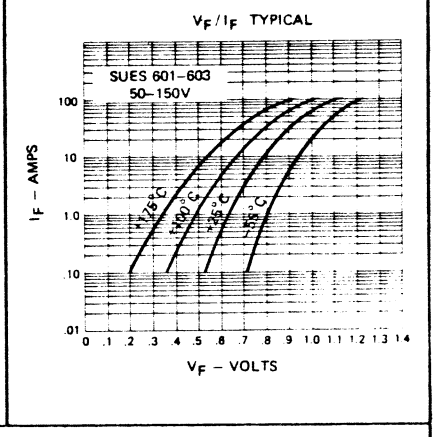
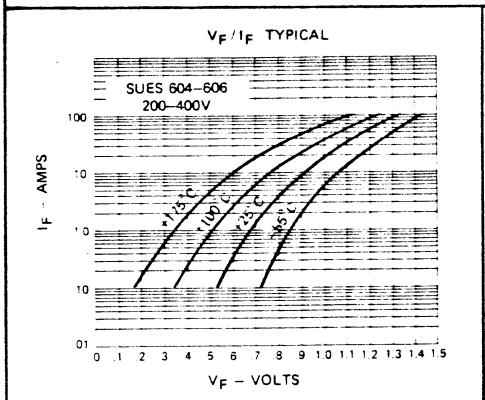
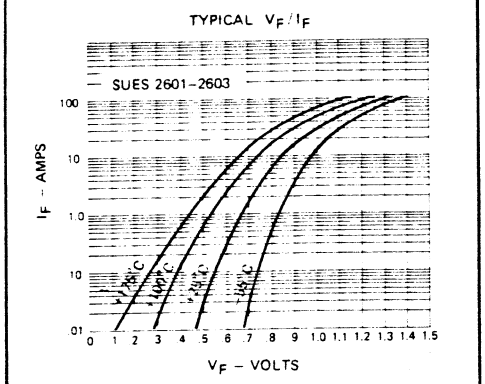
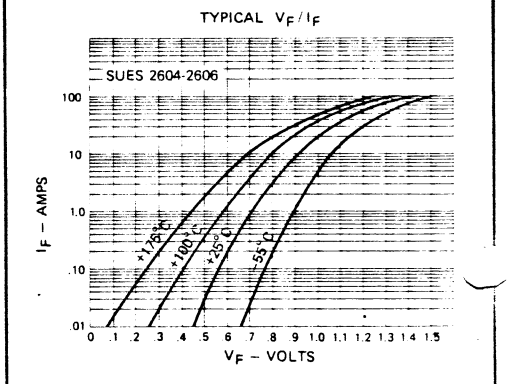

OUTPUT CURRENT vs. CASE TEMPERATURE
% OF RATING – I_O – AMPERES
SUES 601-606
SUES 2601-2606
CASE TEMPERATURE (°C)

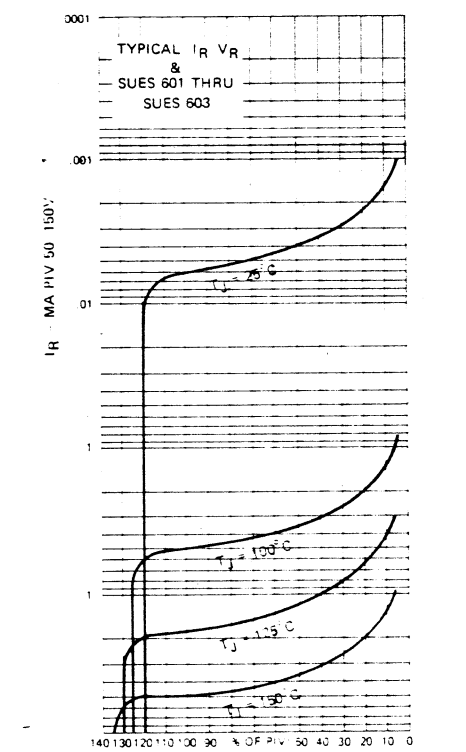

MAXIMUM SURGE CAPABILITY
SUES 601-606
SUES 2601-2606
% OF SURGE RATING
ONE CYCLE
NO. OF CYCLES

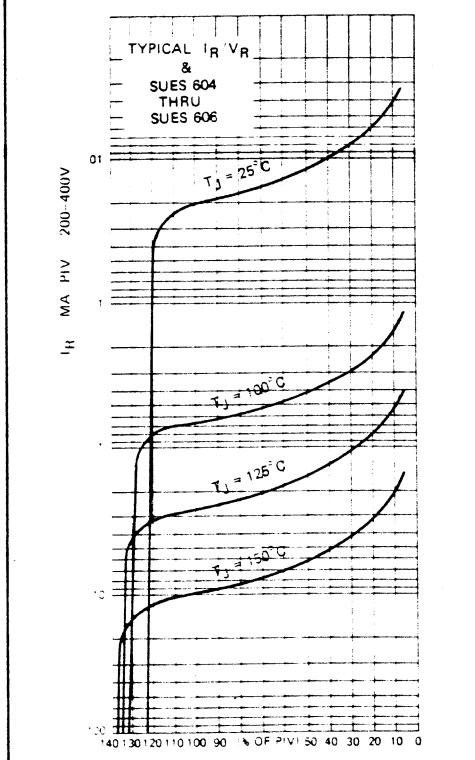

V_F/I_F TYPICAL
SUES 601-603
50-150V
I_F – AMPS
+175°C
+100°C
+25°C
-55°C
V_F – VOLTS

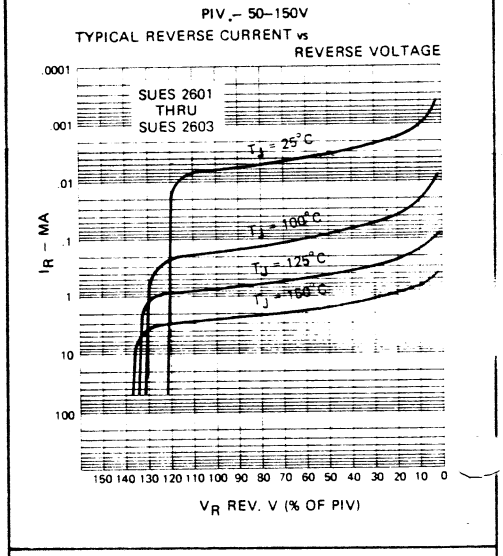

V_F/I_F TYPICAL
SUES 604-606
200-400V
I_F – AMPS
+175°C
+100°C
+25°C
-55°C
V_F – VOLTS

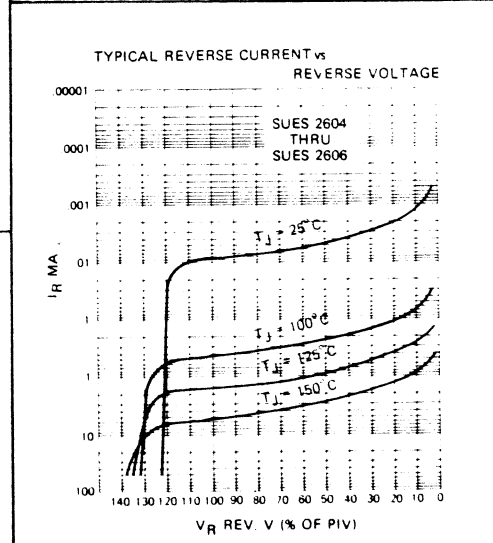

TYPICAL V_F/I_F
SUES 2601-2603
I_F – AMPS
+175°C
+100°C
+25°C
-55°C
V_F – VOLTS

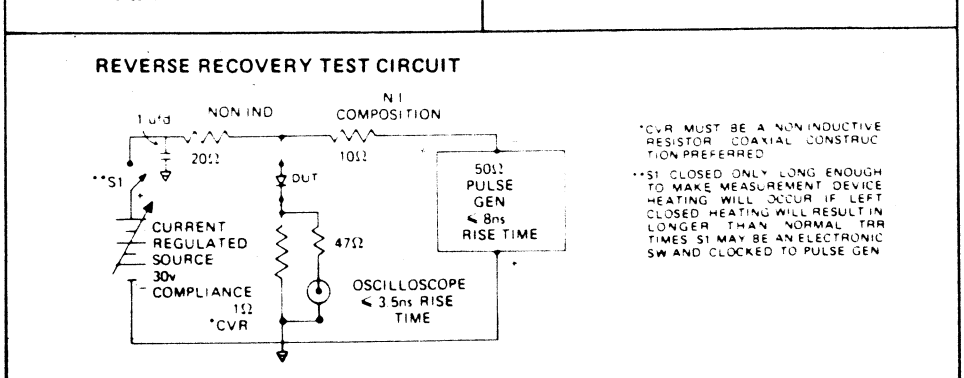

TYPICAL V_F/I_F
SUES 2604-2606
I_F – AMPS
+175°C
+100°C
+25°C
-55°C
V_F – VOLTS


TYPICAL I_R V_R
&
SUES 601 THRU
SUES 603
I_R – MA PIV 50-150V
T_J = 25°C
T_J = 100°C
T_J = 125°C
T_J = 150°C
% OF PIV


TYPICAL I_R V_R
&
SUES 604
THRU
SUES 606
I_R MA PIV 200-400V
T_J = 25°C
T_J = 100°C
T_J = 125°C
T_J = 150°C
% OF PIV


PIV – 50-150V
TYPICAL REVERSE CURRENT vs
REVERSE VOLTAGE
SUES 2601
THRU
SUES 2603
I_R – MA
T_J = 25°C
T_J = 100°C
T_J = 125°C
T_J = 150°C
V_R REV. V (% OF PIV)


TYPICAL REVERSE CURRENT vs
REVERSE VOLTAGE
SUES 2604
THRU
SUES 2606
I_R MA
T_J = 25°C
T_J = 100°C
T_J = 125°C
T_J = 150°C
V_R REV. V (% OF PIV)


REVERSE RECOVERY TEST CIRCUIT
NON IND
NI COMPOSITION
20Ω
10Ω
**S1
DUT
50Ω PULSE GEN ≤ 8ns RISE TIME
CURRENT REGULATED SOURCE 30v COMPLIANCE 1Ω *CVR
47Ω
OSCILLOSCOPE ≤ 3.5ns RISE TIME
*CVR MUST BE A NON INDUCTIVE RESISTOR COAXIAL CONSTRUCTION PREFERRED
**S1 CLOSED ONLY LONG ENOUGH TO MAKE MEASUREMENT DEVICE HEATING WILL OCCUR IF LEFT CLOSED HEATING WILL RESULT IN LONGER THAN NORMAL TRR TIMES S1 MAY BE AN ELECTRONIC SW AND CLOCKED TO PULSE GEN