MOSPEC

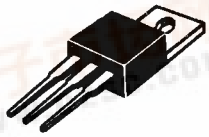
HIGH-VOLTAGE HIGH-SPEED POWER TRANSISTORS

... designed for use in high-voltage,high-speed,power switching in inductive circuit,motor control,solenoid and relay drivers.

FEATURES:
* Collector-Emitter Sustaining Voltage-
  $V_{CEO(SUS)}$ = 800 V (Min)
* Collector-Emitter Saturation Voltage -
  $V_{CE(SAT)}$=1.0V(Max.)@I_C=0.75A

NPN
2SC2979

3 AMPERE
SILICON POWER
TRANSISTORS
800 VOLTS
40 WATTS



TO-220

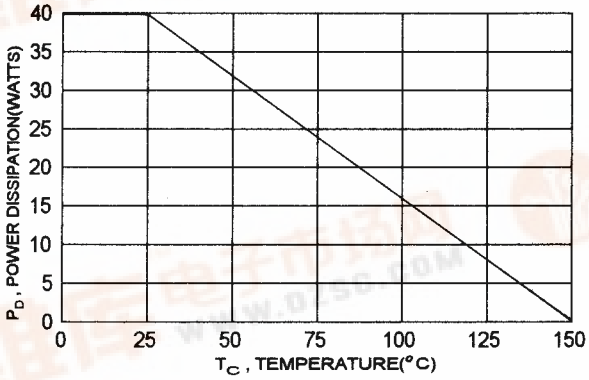
MAXIMUM RATINGS

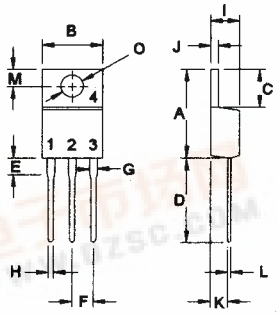
Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	800	V
Collector-Base Voltage	V_{CBO}	900	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current - Continuous -Peak	I_C	3.0 6.0	A
Base Current	I_B	1.5	A
Total Power Dissipation @ T_C = 25°C Derate above 25 °C	P_D	40 0.32	W W/°C
Operating and Storage Junciton Temperature Range	T_J ,T_{STG}	-55 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	3.125	°C/W

FIGURE -1 POWER DERATING





PIN 1.BASE
2.COLLECTOR
3.EMITTER
4.COLLECTOR(CASE)

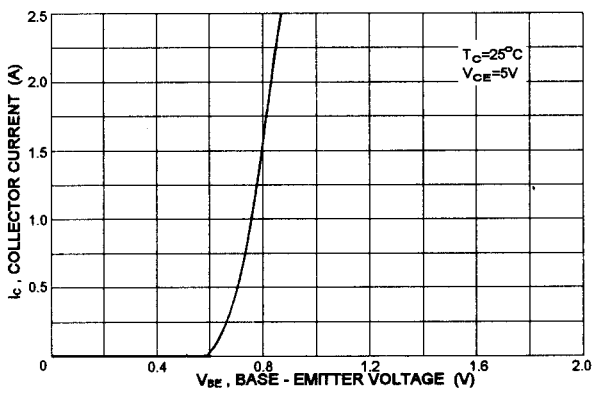
DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.31
B	9.78	10.42
C	5.01	6.52
D	13.06	14.62
E	3.57	4.07
F	2.42	3.66
G	1.12	1.36
H	0.72	0.96
I	4.22	4.98
J	1.14	1.38
K	2.20	2.97
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

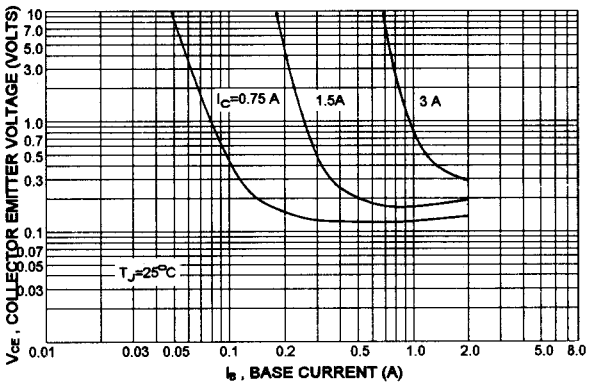
Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (I_C = 0.2 A, R_{BE}= ∞ ,L= 100mH)	$V_{CEO(sus)}$	800		V
Collector-Emitter Sustaining Voltage (I_C= 3A,I_{B1}= 0.9A,L= 180uH,V_{BE}= -5V,I_{B2}= -0.6A Clamped)	$V_{CEX(sus)}$	800		V
Collector Cutoff Current (V_{CE}= 650V,R_{BE}= ∞)	I_{CEO}		100	uA
Collector Cutoff Current (V_{CB} = 750V , I_E = 0)	I_{CBO}		100	uA
Emitter -Base Voltage (I_E = 10mA , I_C = 0)	V_{EBO}	7.0		V
ON CHARACTERISTICS (1)				
DC Current Gain (V_{CE}= 5V,I_C= 0.3A) (V_{CE}= 5V,I_C= 1.5A)	h_{FE}	15 7.0		
Base-Emitter Saturation Voltage (I_C= 0.75A,I_B= 0.15A)	$V_{BE(sat)}$		1.5	V
Collector-Emitter Saturation Voltage (I_C= 0.75 A,I_B= 0.15A)	$V_{CE(sat)}$		1.0	V
SWITCHING CHARATERISTICS				
On Time	I_C= 1.5A,I_{B1}= 0.3A I_{B2}= -0.75A,VCC≒ 250V PW= 20us,Duty≤20%	t_{on}	1.0	μ s
Storage Time		t_s	3.0	μ s
Fall Time		t_f	1.0	μ s

(1) Pulse Test: Pulse Width =300 μs,Duty Cycle ≦ 2.0%

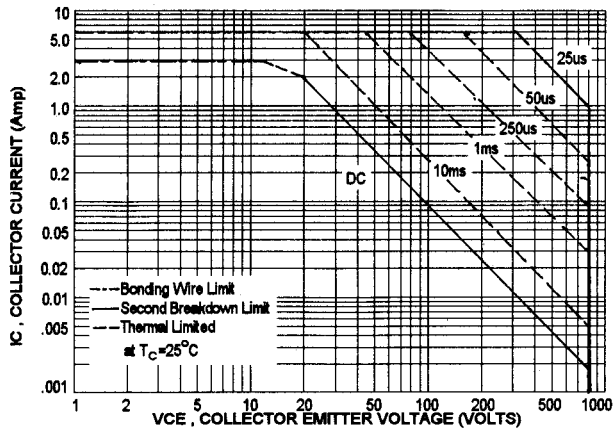
Ic - Vbe



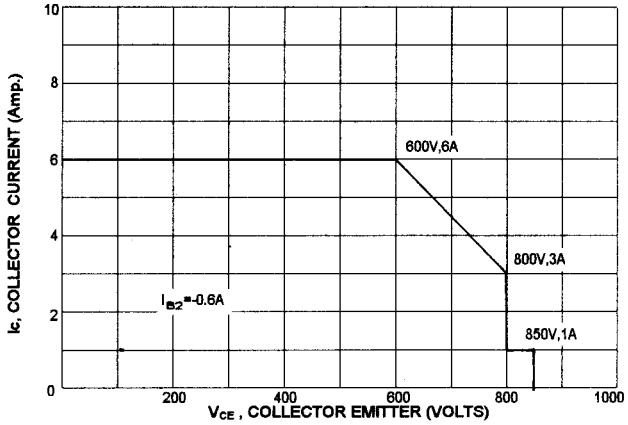
COLLECTOR SATURATION REGION



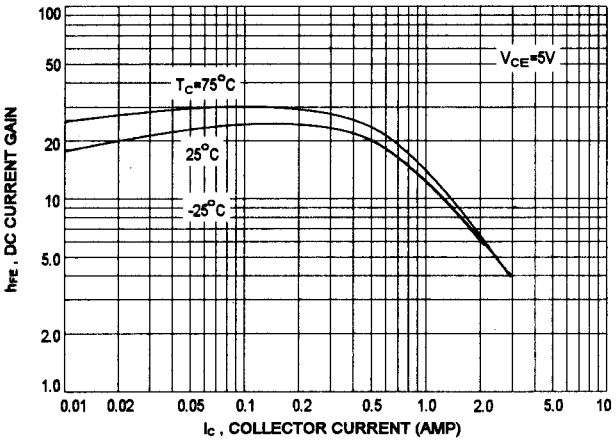
SAFE OPERATING AREA



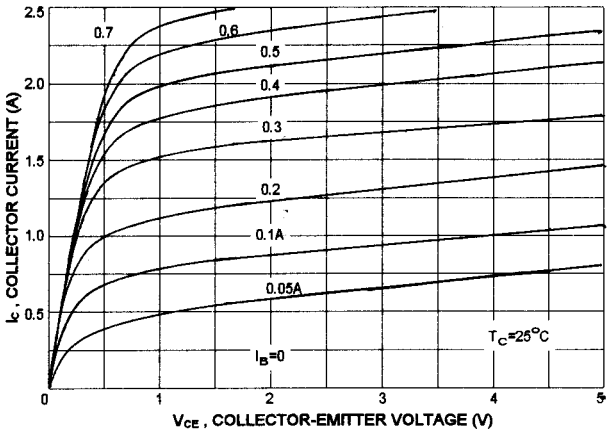
REVERSE BIASE SAFE OPERATING AREA



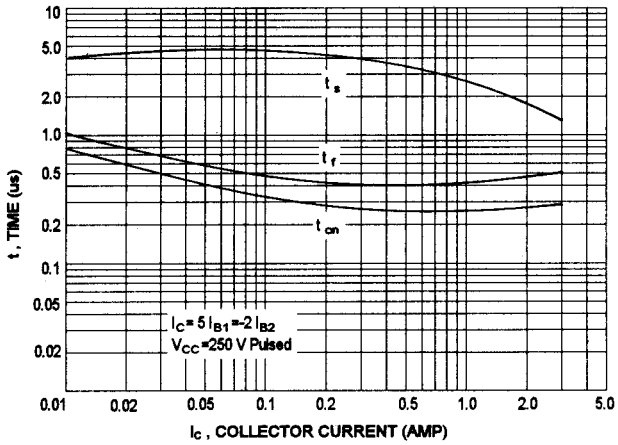
DC CURRENT GAIN



Ic - Vce



SWITCHING TIME



"ON" VOLTAGES