MOSPEC

NPN POWER TRANSISTORS

... designed for use in high-voltage,high-speed,power switching applications such as switching regulator's,inverters. and solenoid/ relay drivers.

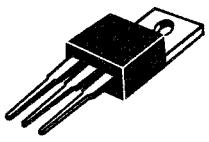
NPN

2SC2826

FEATURES:

*Collector-Emitter Sustaining Voltage-
$V_{CEO(SUS)}$ = 400 V (Min)
* Collector-Emitter Saturation Voltage -
$V_{CE(sat)}$ = 0.7 V (Max.) @ I_C = 1.5 A, I_B = 0.3A
* Switching Time - t_f = 0.5 us (Max.) @ I_C =1.5 A

3.0 AMPERE
SILICON POWER
TRANASISTORS
400 VOLTS
40 WATTS



TO-220

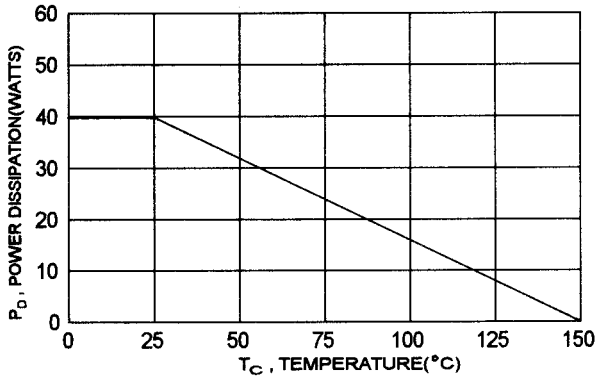
MAXIMUM RATINGS

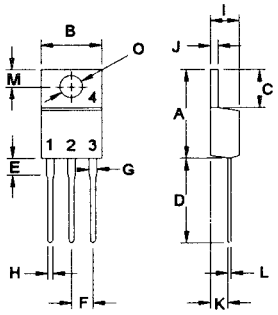
Characteristic	Symbol	2SC2826	Unit
Collector-Emitter Voltage	V_{CEO}	400	V
Collector-Base Voltage	V_{CBO}	500	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current - Continuous - Peak	I_C I_{CM}	3.0 6.0	A
Base current	I_B	1.0	A
Total Power Dissipation @T_C = 25°C Derate above 25°C	P_D	40 0.32	W W/°C
Operating and Storage Junction 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)

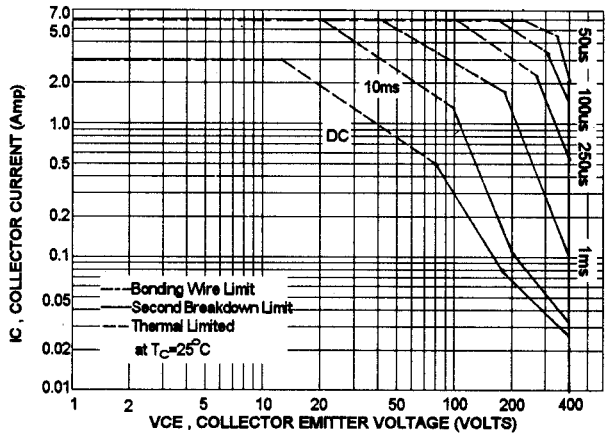
DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.31
B	9.78	10.42
C	5.01	6.52
D	13.06	14.62
E	3.57	4.07
F	2.42	3.66
G	1.12	1.36
H	0.72	0.96
I	4.22	4.98
J	1.14	1.38
K	2.20	2.97
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (I_C= 100 mA, I_B=0)	$V_{CEO(sus)}$	400		V
Collector Cutoff Current (V_{CE}= 320 V, I_B=0)	I_{CEO}		100	uA
Collector Cutoff Current (V_{CB}= 500 V, I_E= 0)	I_{CBO}		100	uA
Emitter Cutoff Current (V_{EB}= 7.0 V, I_C= 0)	I_{EBO}		1.0	mA
ON CHARACTERISTICS (1)				
DC Current Gain (I_C= 1.5 A, V_{CE}= 2.0 V)	hFE	10		
Collector-Emitter Saturation Voltage (I_C= 1.5 A, I_B= 300 mA)	$V_{CE(sat)}$		0.7	V
Base-Emitter Saturation Voltage (I_C= 1.5 A, I_B= 300 mA)	$V_{BE(sat)}$		1.5	V
DYNAMIC CHARACTERISTICS				
Current-Gain-Bandwidth Product (I_C = 0.3 A, V_{CE} = 10 V, f = 1.0 MHz)	f_T	10		MHz
SWITCHING CHARACTERISTICS				
On Time	V_{CC}= 30 V, I_C= 1.5 A I_{B1}=-I_{B2}= 300 mA R_L=20 ohm	t_{on}	1.0	us
Storage Time		t_s	2.0	us
Fall Time		t_f	0.5	us

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

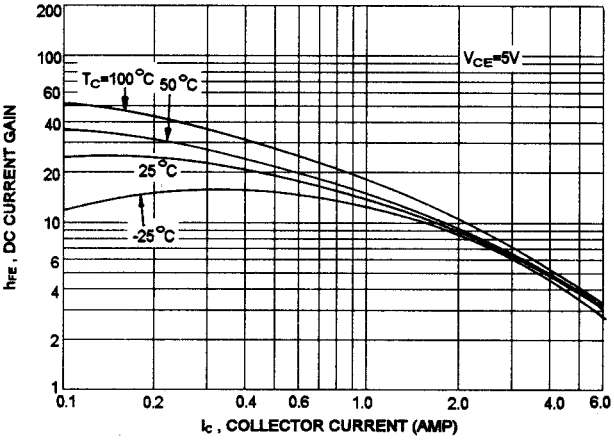
ACTIVE-REGION SAFE OPERATING AREA (SOA)



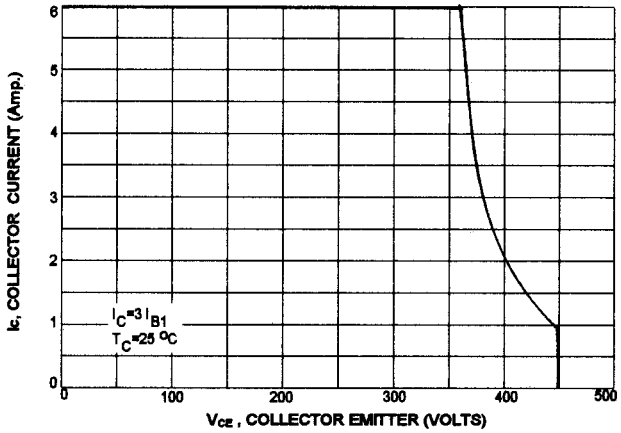
There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation than curves indicate.

The data of SOA curve is base on $T_{J(PK)}$=150 °C;T_C is variable depending on conditions. second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(PK)}$≤150°C,At high case temperatures, thermal limita - tion will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

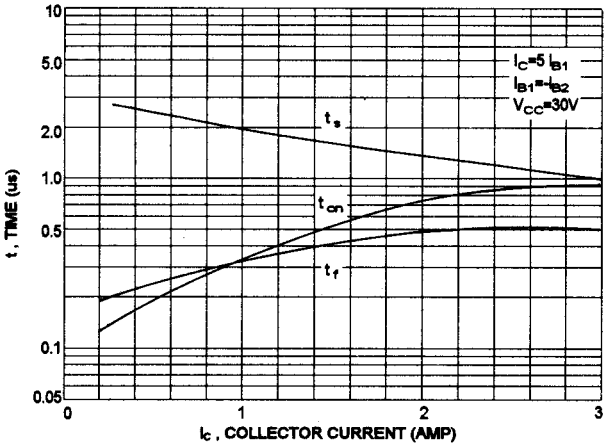
DC CURRENT GAIN



REVERSE BIASE SAFE OPERATING AREA



SWITCHING TIME



COLLECTOR SATURATION REGION