MOSPEC

HORIZONTAL DEFLECTION TRANSISTORS

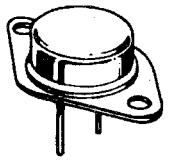
...designed for use in large screen color deflection cicuits

FEATURES:
* Collector-Emitter Sustaining Voltage
  $V_{CE(sus)}$= 500V(Min)
* Fast Switching Time
  t_f = 1.0 us @I_C= 2.5A
* Glass Passivated Collector-Base Junction

NPN

2SC1875

4.5 AMPERE
NPN SILICON
POWER TRANASISTORS
1500 VOLTS
50 WATTS



TO-3

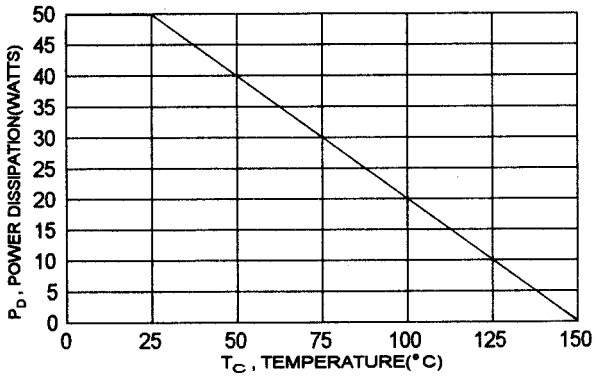
MAXIMUM RATINGS

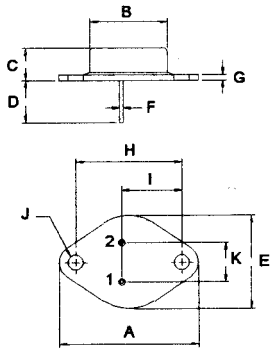
Characteristic	Symbol	2SC1875	Unit
Collector-Emitter Voltage	V_{CEO}	500	V
Collector-Base Voltage	V_{CBO}	1500	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current - Continuous - Peak	I_C I_{CM}	3.5 10	A
Base current	I_B	1.0	A
Total Power Dissipation @T_C = 25°C Derate above 25°C	P_D	50 0.4	W W/°C
Operating and Storage Junction Temperature Range	T_J , T_{STG}	-65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	2.5	°C/W

FIGURE -1 POWER DERATING





PIN 1.BASE
2.EMITTER
COLLECTOR(CASE)

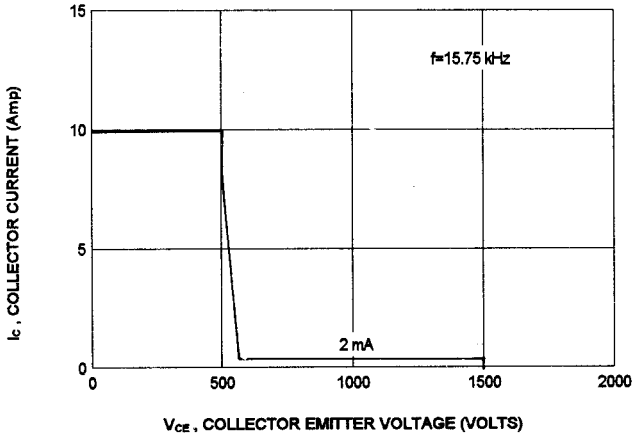
DIM	MILLIMETERS	
	MIN	MAX
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.88	4.36
K	10.67	11.18

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Voltage (I_C= 100 mA, I_B= 0)	V_{CEO}	500		V
Collector Cutoff Current (V_{CE}= 1500 V, V_{BE}= 0)	I_{CES}		1.0	mA
Collector Cutoff Current (V_{CB}= 1000 V, I_E= 0)	I_{CBO}		20	uA
Emitter Cutoff Current (V_{EB}= 5.0 V, I_C= 0)	I_{EBO}		20	uA
ON CHARACTERISTICS (1)				
DC Current Gain (I_C= 0.5 A, V_{CE}= 10 V) (I_C= 2.0 A, V_{CE}= 10 V)	hFE	10 5.0	35 25	
Collector-Emitter Saturation Voltage (I_C= 2.5 A, I_B= 0.6 A)	$V_{CE(sat)}$		10	V
Base-Emitter Saturation Voltage (I_C= 2.5 A, I_B= 0.6 A)	$V_{BE(sat)}$		1.2	V
SWITCHING CHARATERISTICS				
Storage Time	I_C= 2.5 A, I_{B1}= -I_{B2}=0.6A Pw=20 μs	t_s	10	μs
Fall Time		t_f	1.0	μs

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

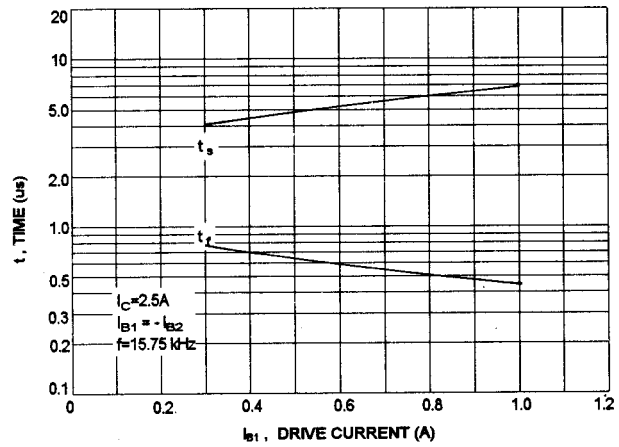
ACTIVE-REGION SAFE OPERATING AREA (SOA)



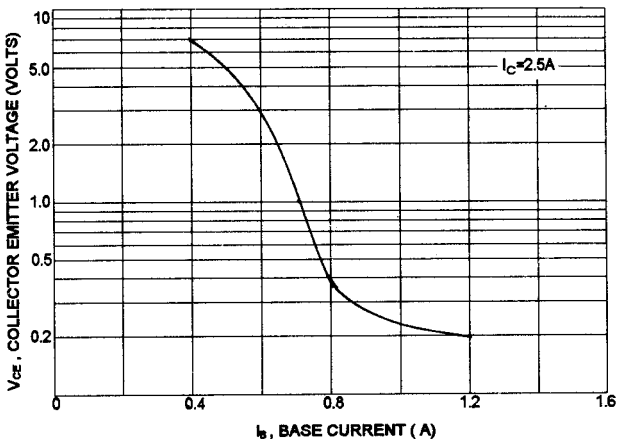
There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation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

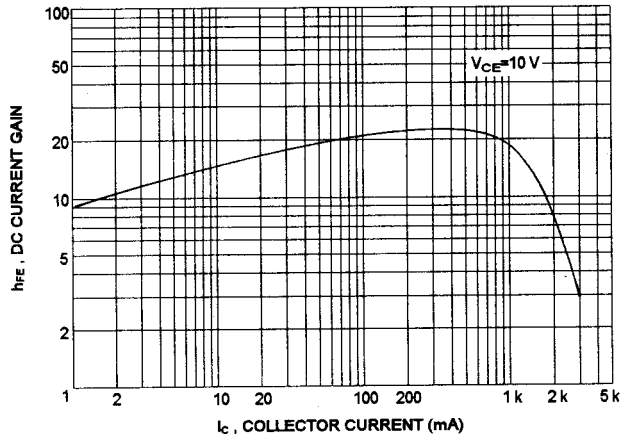
ts, tf -I_{B1}



$V_{CE(SAT)}$-I_B



DC CURRENT GAIN



$V_{BE(SAT)}$-I_B