MOSPEC

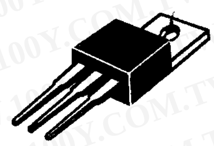
COMPLEMENTARY SILICON POWER TRANSISTORS

...designed for use in general-purpose amplifier and switching applications

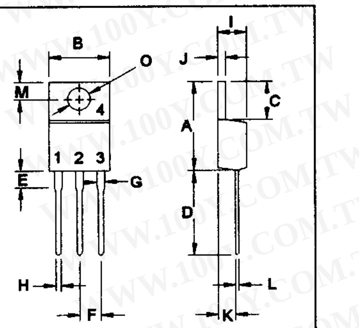
FEATURES:
* Power Dissipation - P_D = 75 W @ T_C = 25°C
* DC Current Gain hFE = 20 ~ 100 @ I_C = 4.0 A
* $V_{CE(sat)}$ = 1.1 V (Max.) @ I_C = 4.0 A, I_B = 400 mA

PNP	NPN
MJE2955T	MJE3055T

10 AMPERE
COMPLEMENTARY SILICON
POWER TRANSISTORS
60 VOLTS
75 WATTS



TO-220



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

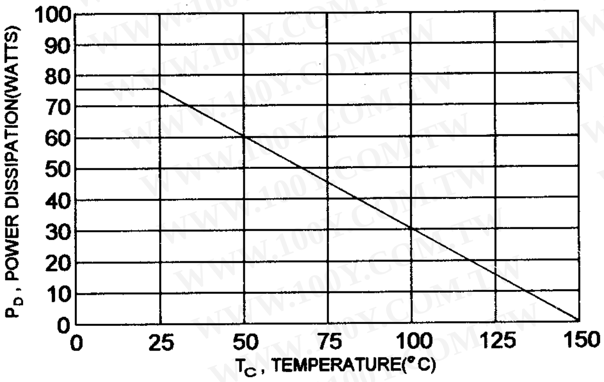
MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	60	V
Collector-Base Voltage	V_{CBO}	70	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current-Continuous	I_C	10	A
Base Current	I_B	6.0	A
Total Power Dissipation @T_C=25°C Derate above 25°C	P_D	75 0.6	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	1.67	°C/W

FIGURE -1 POWER DERATING



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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector - Emitter Sustaining Voltage (1) (I_C = 200 mA, I_B = 0)	$V_{CEO(SUS)}$	60		V
Collector Cutoff Current (V_{CE} = 30 V, I_B = 0)	I_{CEO}		0.7	mA
Collector Cutoff Current (V_{CE} = 70 V, $V_{BE(off)}$ = 1.5 V) (V_{CE} = 70 V, $V_{BE(off)}$ = 1.5 V, T_C = 150°C)	I_{CEX}		1.0 5.0	mA
Collector Cutoff Current (V_{CB} = 70 V, I_E = 0) (V_{CB} = 70 V, I_E = 0, T_C = 150°C)	I_{CBO}		1.0 10	mA
Emitter Cutoff Current (V_{EB} = 5.0 V, I_C = 0)	I_{EBO}		5.0	mA
ON CHARACTERISTICS (1)				
DC Current Gain (I_C = 4.0 A, V_{CE} = 4.0 V) (I_C = 10 A, V_{CE} = 4.0 V)	hFE	20 5.0	100	
Collector - Emitter Saturation Voltage (I_C = 4.0 A, I_B = 0.4 A) (I_C = 10 A, I_B = 3.3 A)	$V_{CE(sat)}$		1.1 8.0	V
Base - Emitter On Voltage (I_C = 4.0 A, V_{CE} = 4.0 V)	$V_{BE(on)}$		1.8	V
DYNAMIC CHARACTERISTICS				
Current Gain - Bandwidth Product (2) (I_C = 500 mA, V_{CE} = 10 V, f = 500 KHz)	f_T	2.0		MHz

(1) Pulse Test: Pulse width = 300 us, Duty Cycle ≦ 2.0%
(2) $f_T = |h_{fe}| \cdot f_{test}$

FIG-2 "ON" VOLTAGE

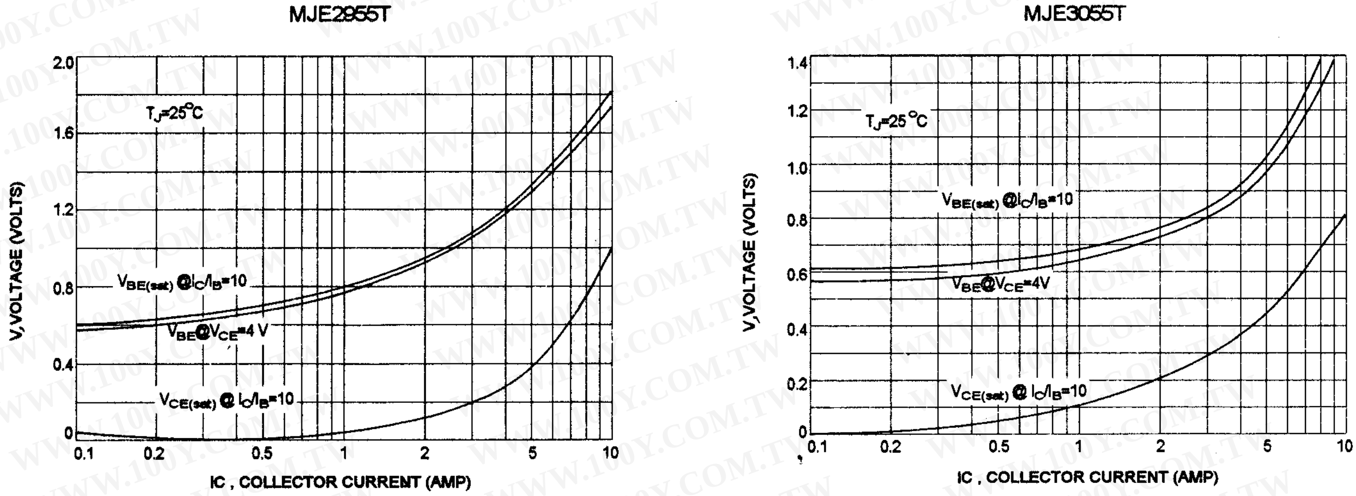
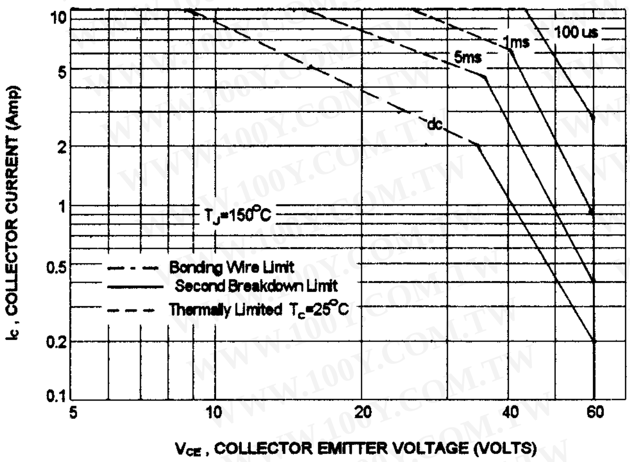


FIG-3 ACTIVE-REGION SAFE OPERATING AREA



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 FIG-3 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 $T_{J(PK)} \leq 150$°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.

FIG-4 DC CURRENT GAIN