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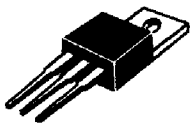
COMPLEMENTARY SILICON PLASTIC POWER TRANSISTORS

... designed for use as output device in complementary audio amplifiers up to 30-Watts music power per channel

FEATURES:
*Collector-Emitter Sustaining Voltage-
$V_{CEO(sus)}$ = 60 V (Min)
* DC Current Gain-
hFE = 25-100 @ I_C = 3.0 A

NPN MJE2801T **PNP MJE2901T**

10 AMPERE
COMPLEMENTARY SILICON
POWER TRANASISTORS
60 VOLTS
75 WATTS



TO-220

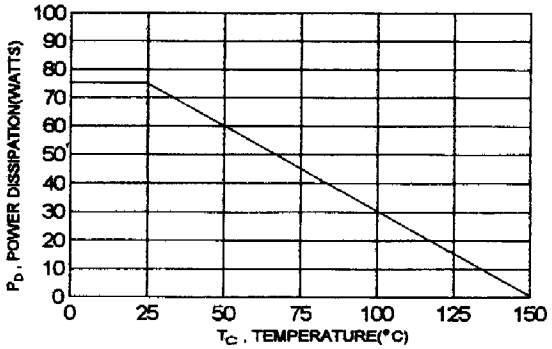
MAXIMUM RATINGS

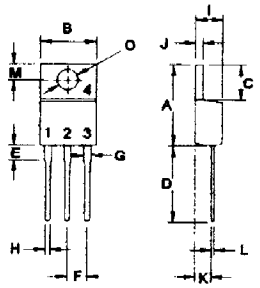
Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	60	V
Collector-Base Voltage	V_{CBO}	60	V
Emitter-Base Voltage	V_{EBO}	4.0	V
Collector Current - Continuous - Peak	I_C I_{CM}	10 15	A
Base current	I_B	5.0	A
Total Power Dissipation @T_C = 25°C Derate above 25°C	P_D	75 0.6	W W/°C
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	1.67	°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 Breakdown Voltage (1) (I_C= 200 mA, I_B= 0)	V_{CEO}	60		V
Collector Cutoff Current (V_{CB}= 60 V , I_E= 0) (V_{CB}= 60 V , I_E= 0, T_C=150 °C)	I_{CBO}		0.1 2.0	mA
Emitter Cutoff Current (V_{EB}= 4.0 V , I_C= 0)	I_{EBO}		1.0	mA
ON CHARACTERISTICS (1)				
DC Current Gain (I_C= 3.0 A, V_{CE}= 2.0 V)	hFE	25	100	
Base-Emitter On Voltage (I_C= 3.0 A, V_{CE}= 2.0 V)	$V_{BE(on)}$		1.4	V

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

FIG-2 "ON" VOLTAGE

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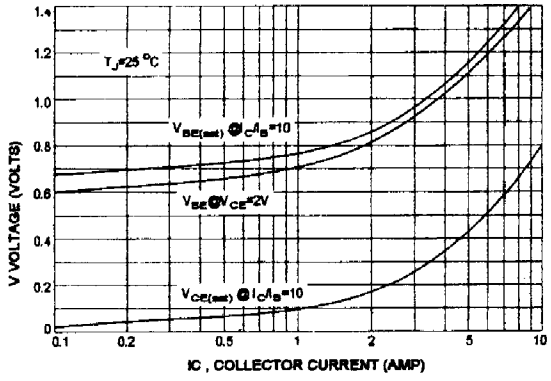

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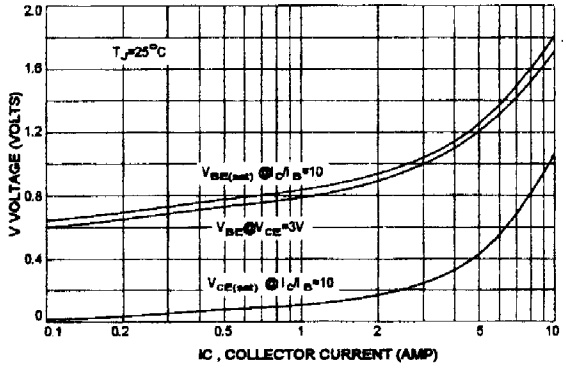


FIG-3 DC CURRENT GAIN

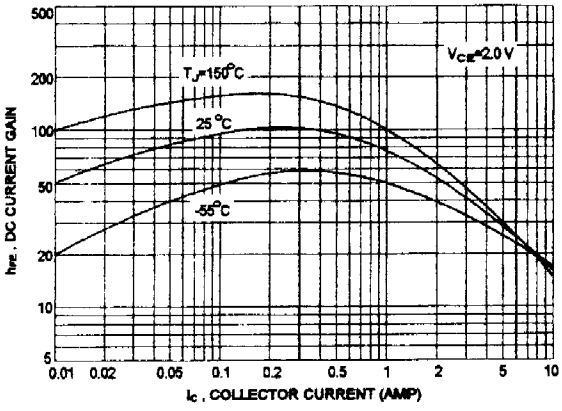
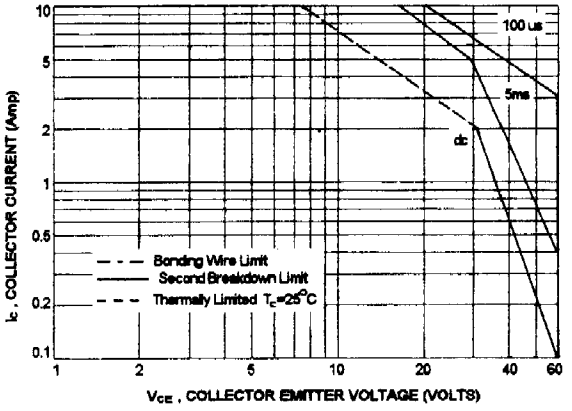


FIG-4 ACTIVE-REGION SAFE OPERATING AREA



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-4 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 limitation will reduce the power that can be handled to values less than the limitations imposed by second breakdown.