MOSPEC

MEDIUM-POWER COMPLEMENTARY SILICON TRANSISTORS

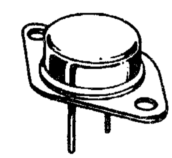
...designed for use as output devices in complementary general purpose amplifier applications.

FEATURES:

* High Gain Darlington Performance
* DC Current Gain hFE = 3500(Typ) @ I_C = 10 A
* Monolithic Construction with Built-in Base-Emitter Shunt Resistor

PNP	NPN
MJ4030	MJ4033
MJ4031	MJ4034
MJ4032	MJ4035

16 AMPERE
COMPLEMENTARY
SILICON POWER
DARLINGTON TRANSISTOR
60-100 VOLTS
150 WATTS



TO-3

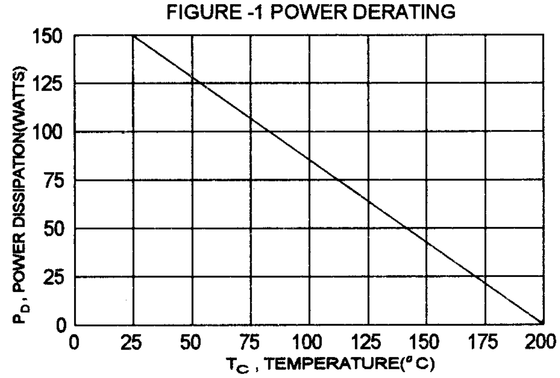
MAXIMUM RATINGS

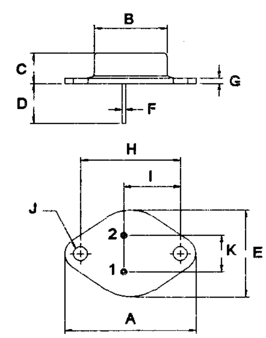
Characteristic	Symbol	MJ4030 MJ4033	MJ4031 MJ4034	MJ4032 MJ4035	Unit
Collector-Emitter Voltage	V_{CEO}	60	80	100	V
COllector-Base Voltage	V_{CBO}	60	80	100	V
Emitter-Base Voltage	V_{EBO}	5.0			V
Collector Current-Continuous -Peak	I_C I_{CM}	16 20			A
Base Current	I_B	0.5			A
Total Power Dissipation @T_C= 25°C Derate above 25°C	P_D	150 0.857			W W/°C
Operating and Storage Junction Temperature Range	T_J ,T_{STG}	- 65 to +200			°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	1.17	°C/W

FIGURE -1 POWER DERATING





PIN 1.BASE
2.EMITTER
COLLECTOR(CASE)

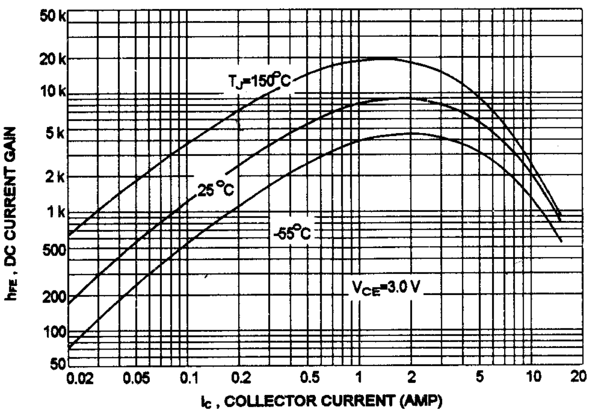
DIM	MILLIMETERS	
	MIN	MAX
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.88	4.36
K	10.67	11.18

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

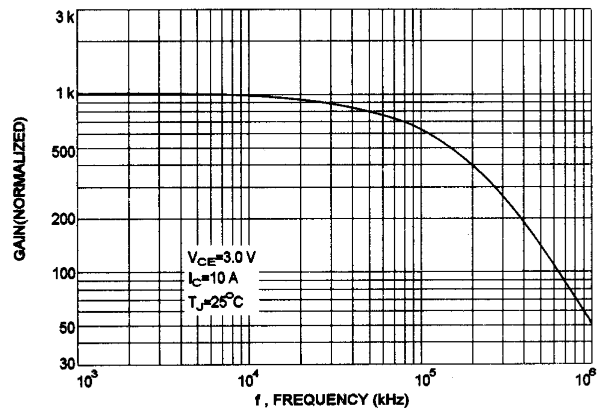
Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector - Emitter Sustaining Voltage (1)		$V_{CEO(sus)}$			V
(I_C = 100 mA, I_B = 0)	MJ4030,MJ4033		60		
	MJ4031,MJ4034		80		
	MJ4032,MJ4035		100		
Collector Cutoff Current		I_{CEO}			mA
(V_{CE} = 30 V, I_B = 0)	MJ4030,MJ4033			3.0	
(V_{CE} = 40 V, I_B = 0)	MJ4031,MJ4034			3.0	
(V_{CE} = 50 V, I_B = 0)	MJ4032,MJ4035			3.0	
Collector-Emitter Leakage Current		I_{CER}			mA
(V_{CE} = 60 V, R_{BE} = 1.0k ohm)	MJ4030,MJ4033			1.0	
(V_{CE} = 80 V, R_{BE} = 1.0k ohm)	MJ4031,MJ4034			1.0	
(V_{CE} = 100 V, R_{BE} = 1.0k ohm)	MJ4032,MJ4035			1.0	
(V_{CE} = 60 V, R_{BE} = 1.0k ohm , T_C = 150°C)	MJ4030,MJ4033			5.0	
(V_{CE} = 80 V, R_{BE} = 1.0k ohm , T_C = 150°C)	MJ4031,MJ4034			5.0	
(V_{CE} = 100 V, R_{BE} = 1.0k ohm , T_C = 150°C)	MJ4032,MJ4035			5.0	
Emitter Cutoff Current		I_{EBO}			mA
(V_{EB} = 5.0 V, I_C = 0)				5.0	
ON CHARACTERISTICS (1)					
DC Current Gain		hFE			
(I_C = 10 A, V_{CE} = 3.0 V)			1000		
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			V
(I_C = 10 A, I_B = 40 mA)				2.5	
(I_C = 16 A, I_B = 80 mA)				4.0	
Base-Emitter On Voltage		$V_{BE(on)}$			V
(I_C = 10 A, V_{CE} = 3.0 V)				3.0	

(1) Pulse Test: Pulse width = 300 us , Duty Cycle ≦ 2.0%

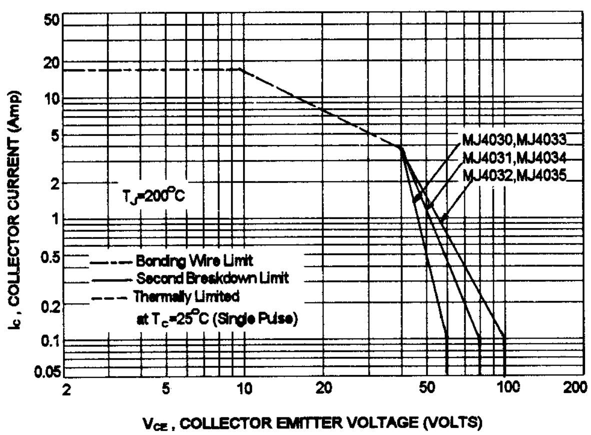
DC CURRENT GAIN



SMALL-SIGNAL CURRENT GAIN



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.

At high case temperatures,thermal limitation will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

"ON" VOLTAGE