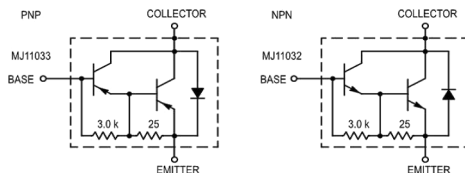


**RoHS
Compliant**



Features

High DC Current Gain - $h_{FE} = 1000$ (Min.) @ $I_c = 25A$ DC

$h_{FE} = 400$ (Min) @ $I_c = 50$ Adc

2. Curves to 100 A (Pulsed)
3. Diode Protection to Rated I_c
4. Monolithic Construction with Built-In Base-Emitter Shunt Resistor
5. Junction Temperature to +200°C

APPLICATIONS: For use as output devices in complementary general purpose amplifier applications.

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

Rating	Symbol	MJ11032 MJ11033	Units
Collector - Emitter Voltage	V_{CEO}	120	V DC
Collector - Base Voltage	V_{CB}	120	V DC
Emitter Base Voltage	V_{EB}	5	V DC
Collector Current - Continuous Peak	I_c I_{CM}	50 100	A _{DC}
Base Current - Continuous	I_B	2	A _{DC}
Total Device Dissipation @ TC 25°C Derate above 25°C @ TC = 100°C	P_D	300 1.71	Watts W/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55°C to +200°C	°C

Thermal Characteristics

Characteristic	Symbol	Rating	Unit
Maximum Lead Temperature for Soldering Purposes for 10 ≤ seconds	T_L	275	°C
Thermal Resistance, Junction to case	R_{J-c}	0.584	°C

Electrical Characteristics at $T_a = 25^\circ\text{C}$ unless otherwise specified)

Description	Symbol	Min	Max	Units
Off Characteristics				
Collector-Emitter Breakdown Voltage (1) ($I_C = 100\text{mA DC}$, $I_B = 0$) MJ11032, MJ11033	$V_{(BR)CEO}$	120	-	V DC
Collector-Emitter Leakage Current ($V_{CE} = 120\text{V DC}$, $R_{BE} = 1\text{k}\Omega$, $T_C = 150^\circ\text{C}$) MJ11032, MJ11033	I_{CER}	-	10	mA DC
Emitter Cut Off Current ($V_{BE} = 5\text{V DC}$, $I_C = 0$)	I_{EBO}	-	5	mA DC
Collector-Emitter Leakage Current ($V_{CE} = 50\text{V DC}$, $I_B = 0$)	I_{CEO}	-	2	mA DC
On Characteristics (1)				
DC Current Gain ($I_C = 25\text{A DC}$, $V_{CE} = 5\text{V DC}$ ($I_C = 50\text{A DC}$, $V_{CE} = 5\text{V DC}$)	h_{FE}	1k 400	18 k -	-
Collector-Emitter Saturation Voltage ($I_C = 25\text{A DC}$, $I_B = 250\text{mA DC}$ ($I_C = 50\text{A DC}$, $I_B = 500\text{mA DC}$)	$V_{CE(sat)}$	-	2.5 3.5	V DC
Base-Emitter Saturation Voltage ($I_C = 25\text{A DC}$, $I_B = 200\text{mA DC}$ ($I_C = 50\text{A DC}$, $I_B = 300\text{mA DC}$)	$V_{BE(sat)}$	-	3 4.5	V DC-

(1) Pulse Test: Pulse Width = $300\mu\text{s}$, Duty Cycle = 2%

Typical Characteristics Curves

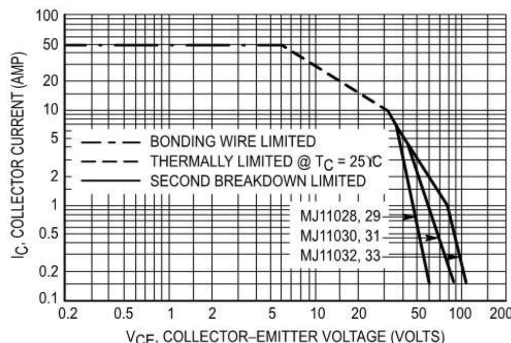


Figure 2. DC Safe Operating Area

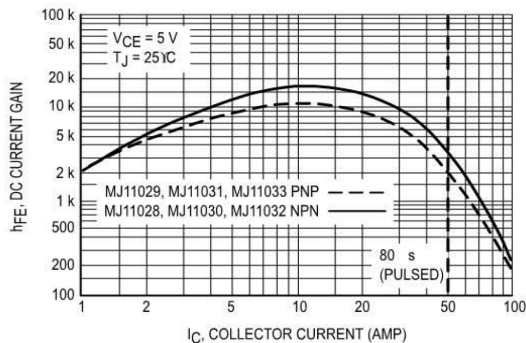


Figure 3. DC Current Gain

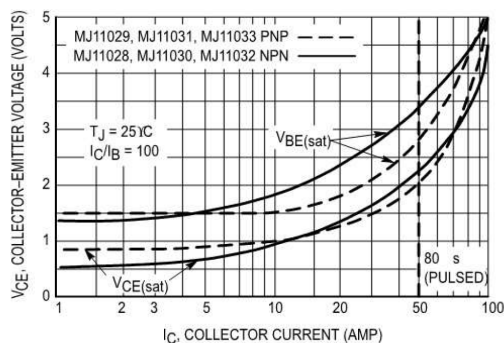
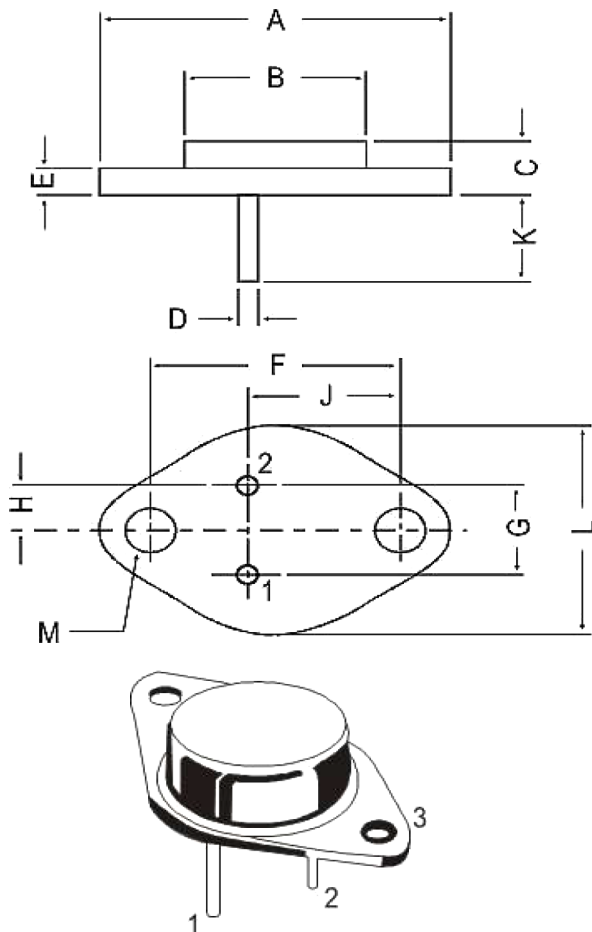


Figure 4. "On" Voltage

Package Details



Dimensions : Millimetres

PIN CONFIGURATION

1. BASE
2. EMITTER
3. COLLECTOR

Dim	Min.	Max.
A	-	39.37
B	-	22.22
C	6.35	8.5
D	0.96	1.09
E	-	1.77
F	29.9	30.4
G	10.69	11.18
H	5.2	5.72
J	16.64	17.15
K	11.15	12.25
L	-	26.67
M	3.84	4.19

Part Number Table

Description	Part Number
Silicon Darlington Complimentary Power Transistor, NPN, 120V, 50A, TO-3	MJ11032
Silicon Darlington Complimentary Power Transistor, PNP, 120V, 50A, TO-3	MJ11033

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