

isc Silicon NPN Darlington Power Transistor
MJ1000
DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 60V(\text{Min.})$
- High DC Current Gain-
: $h_{FE} = 1000(\text{Min.}) @ I_C = 3A$
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 2.0V(\text{Max.}) @ I_C = 3A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

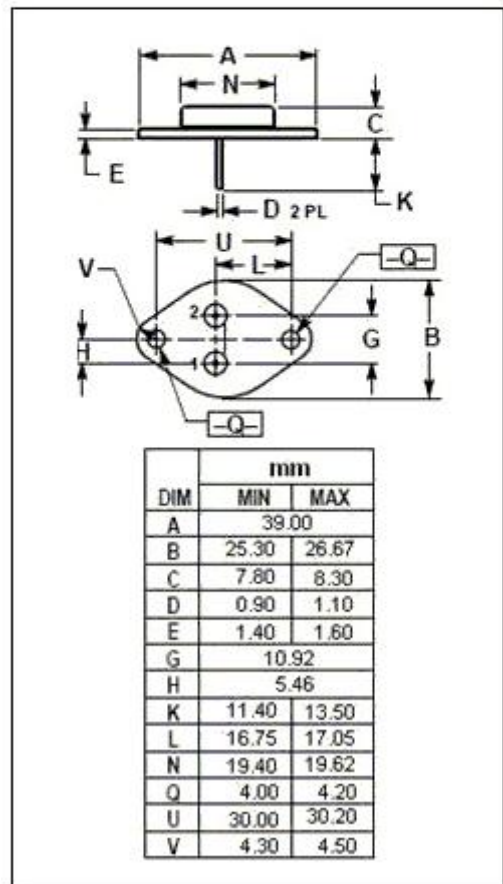
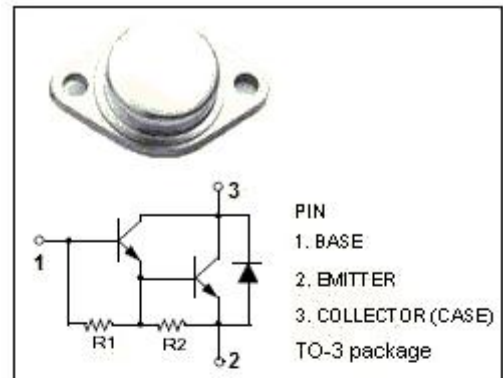
- Designed for use as output devices in complementary general purpose amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	10	A
I_B	Base Current-Continuous	0.1	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	90	W
T_j	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~+200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.94	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _c = 50mA; I _B = 0	60			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _c = 3A; I _B = 12mA			2.0	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _c = 8A; I _B = 40mA			4.0	V
V _{BE(on)}	Base-Emitter On Voltage	I _c = 3A, V _{CE} = 3V			2.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 60V; I _E =0, T _c =150°C			1.0	mA
I _{CEO}	Collector Cutoff Current	V _{CE} = 30V; I _B = 0			0.5	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _c = 0			2.0	mA
h _{FE-1}	DC Current Gain	I _c = 3A, V _{CE} = 3V	1000			
h _{FE-2}	DC Current Gain	I _c = 4A, V _{CE} = 3V	750			

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