

isc Silicon NPN Darlington Power Transistor

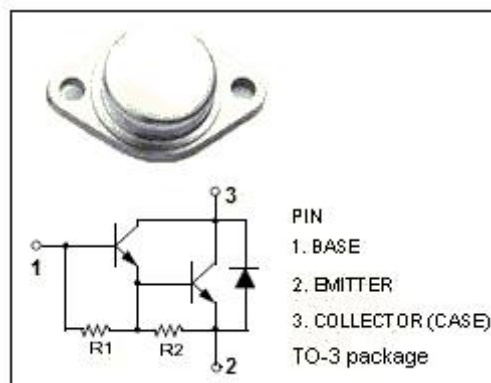
MJ11018

DESCRIPTION

- Collector-Emitter Sustaining Voltage
: $V_{CEO(SUS)} = 150V$ (Min.)
- High DC Current Gain-
: $h_{FE} = 400$ (Min.) @ $I_C = 10A$
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 1.0V$ (Max.) @ $I_C = 5.0A$
- Complement to the PNP MJ11017
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

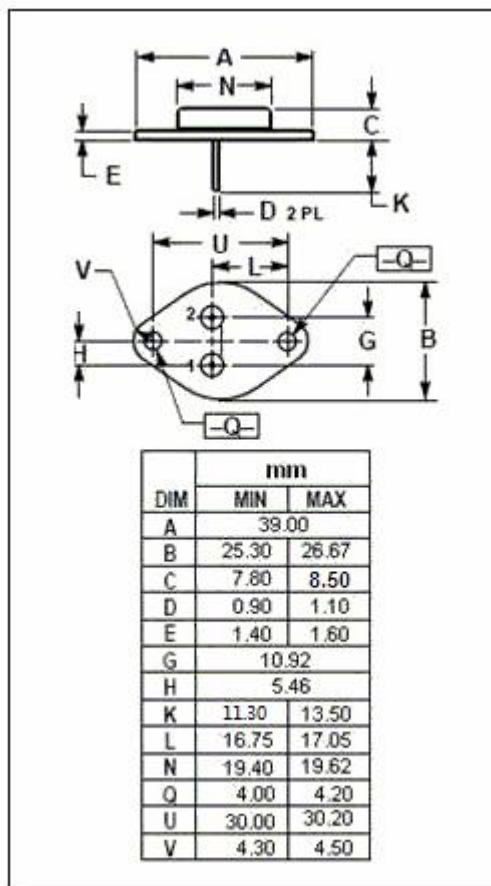
- Designed for general purpose amplifiers, low frequency switching and motor control applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	150	V
V_{CEO}	Collector-Emitter Voltage	150	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	15	A
I_{CM}	Collector Current-Peak	30	A
I_B	Base Current-Continuous	0.5	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ C$	175	W
T_j	Junction Temperature	175	$^\circ C$
T_{stg}	Storage Temperature Range	-65~175	$^\circ C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	0.86	$^\circ C/W$



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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA; I _B = 0	150			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 10A; I _B = 0.1A			2.0	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 15A; I _B = 0.15A			3.4	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 15A; I _B = 0.15A			3.8	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 10A, V _{CE} = 5V			2.8	V
I _{CBO}	Collector Cutoff Current	V _{CB} =150V; I _E =0 V _{CB} =150V; I _E =0; T _C =150°C			0.5 5.0	mA
I _{CEO}	Collector Cutoff Current	V _{CE} = 150V; I _B = 0			1.0	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			2.0	mA
h _{FE-1}	DC Current Gain	I _C = 10A, V _{CE} = 5V	400		15000	
h _{FE-2}	DC Current Gain	I _C = 15A, V _{CE} = 5V	100			

Switching Times

t _d	Delay Time	V _{CC} = 100V; I _C = 10A; I _{B1} = 0.1A V _{BE(off)} = 5V, t _p = 25 μs; Duty Cycle ≤ 10%		0.2		μs
t _r	Rise Time			1.3		μs
t _s	Storage Time			4.5		μs
t _f	Fall Time			10		μs

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