

isc Silicon NPN Darlington Power Transistor

MJ10003

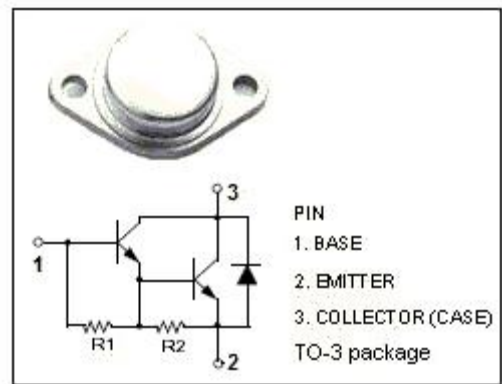
DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 400V$ (Min.)
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

Designed for high voltage, high speed , power switching in Inductive circuits where fall time is critical. They are particularly suited for line operated switch-mode applications as:

- Switching Regulators
- Inverters
- Solenoid and Relay Drivers
- Motor Controls
- Deflection Circuits

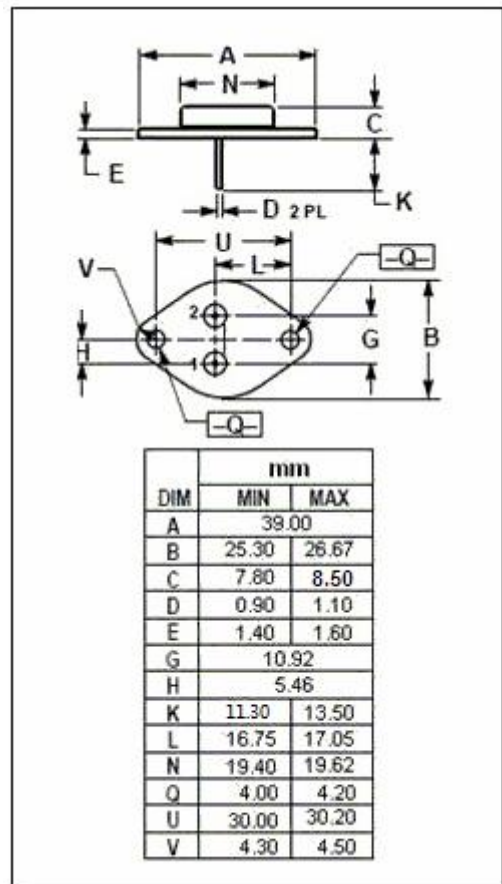


ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ C$)

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Voltage	400	V
V_{CBO}	Collector- Base Voltage	500	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current-Continuous	2.5	A
I_{BM}	Base Current-Peak	5.0	A
P_C	Collector Power Dissipation @ $T_c=25^\circ C$	150	W
T_j	Junction Temperature	200	$^\circ C$
T_{stg}	Storage Temperature Range	-65~200	$^\circ C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	1.17	$^\circ C/W$



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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 = 30mA; I _B = 0	350			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 5A; I _B = 0.25A			1.9	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 10A; I _B = 1A			2.9	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 5A; I _B = 0.25A			2.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} =500V; I _E = 0; T _C =150°C			0.25	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 8V; I _C = 0			175	mA
h _{FE-1}	DC Current Gain	I _C = 2.5A, V _{CE} = 5V	40			
h _{FE-2}	DC Current Gain	I _C = 5A, V _{CE} = 5V	30			
V _{ECF}	C-E Diode Forward Voltage	I _F = 5A			5.0	V
C _{OB}	Output Capacitance	I _E = 0, V _{CB} = 50V; f _{test} = 0.1MHz	60			pF

Switching Times; Resistive Load

t _d	Delay Time	V _{CC} = 250V; I _C = 5A; I _{B1} = 0.25A V _{BE(off)} = 5V t _p = 50 μs, Duty Cycle ≤ 2%		0.05	0.2	μs
t _r	Rise Time			0.25	0.6	μs
t _s	Storage Time			1.2	3.0	μs
t _f	Fall Time			0.6	1.5	μs

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