

Silicon NPN Darlington Power Transistor

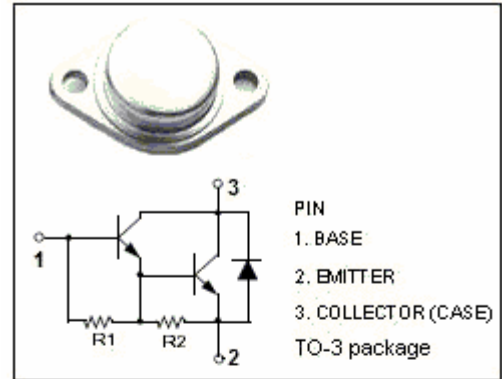
MJ11022

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 250V$ (Min.)
- High DC Current Gain-
: $h_{FE} = 400$ (Min.)@ $I_C = 10A$
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 1.0V$ (Max.)@ $I_C = 5.0A$

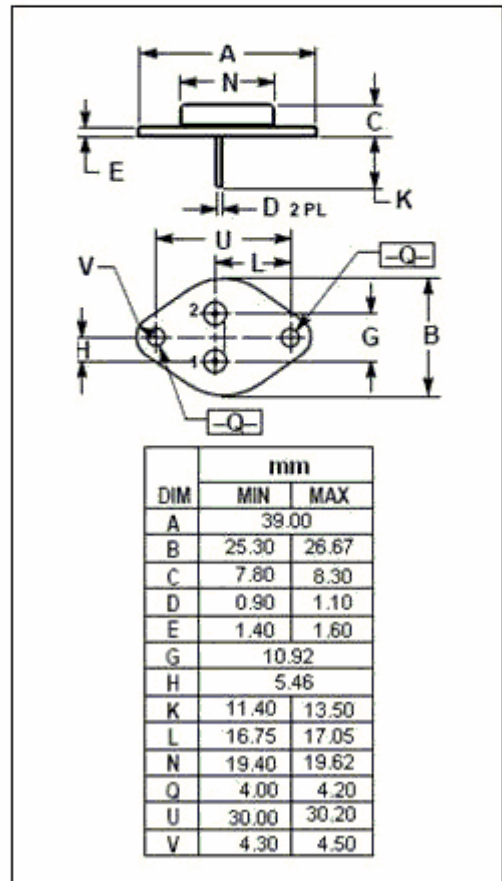
APPLICATIONS

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



ABSOLUTE MAXIMUM RATINGS ($T_a=25$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	250	V
V_{CEO}	Collector-Emitter Voltage	250	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 @ $T_C=25$	175	W
T_j	Junction Temperature	175	
T_{stg}	Storage Temperature Range	-65~200	



THERMAL CHARACTERISTICS

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

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ELECTRICAL CHARACTERISTICS

T_C=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 0.1A; I _B = 0	250			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 _{CEV}	Collector Cutoff Current	V _{CE} =250V; V _{BE(off)} =1.5V V _{CE} =250V; V _{BE(off)} =1.5V; T _C =150			0.5 5.0	mA
I _{CEO}	Collector Cutoff Current	V _{CE} = 125V; 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			
C _{OB}	Output Capacitance	I _E = 0, V _{CB} = 10V; f _{test} = 0.1MHz			400	pF

Switching Times

t _d	Delay Time	V _{CC} = 100V; I _C = 10A; I _{B1} = 0.1A V _{BE(off)} = 5V		0.15		μs
t _r	Rise Time			1.2		μs
t _s	Storage Time			4.4		μs
t _f	Fall Time			10		μs