

isc Silicon NPN Darlington Power Transistor
MJ10023
DESCRIPTION

- With TO-3 packaging
- Very high DC current gain
- Fast turn-off times
- Monolithic darlington transistor with integrated antiparallel collector-emitter diode
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

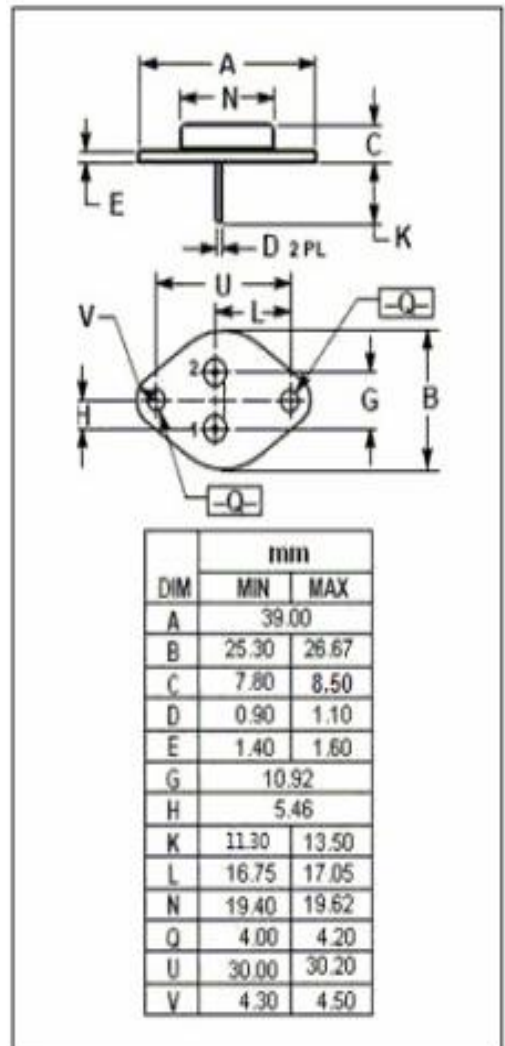
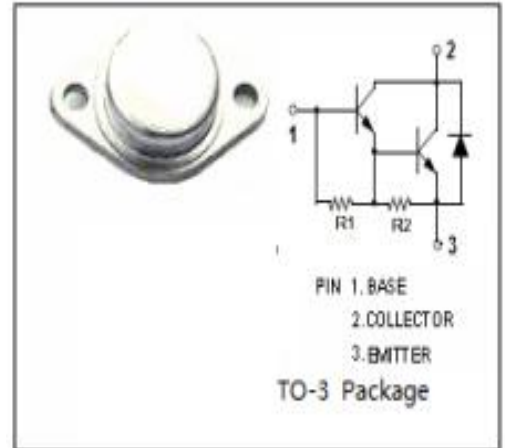
- Electronic ignition
- Alternator regulator
- Solenoid and relay drivers
- AC and DC motor controls

ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{CB0}	Collector-Base Voltage	600	V
V _{CEO}	Collector-Emitter Voltage	400	V
V _{EBO}	Emitter-Base Voltage	8	V
I _C	Collector Current-Continuous	40	A
I _{CM}	Collector Current-Peak	80	A
I _B	Base Current- Continuous	20	A
P _C	Collector Power Dissipation	250	W
T _j	Max.Junction Temperature	200	°C
T _{stg}	Storage Temperature Range	-65~200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance,Junction to Case	0.7	°C/W



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ELECTRICAL CHARACTERISTICS
 $T_c=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=100\text{mA}, I_B=0$	400		V
$V_{CE(sat)1}$	Collector-Emitter Saturation Voltage	$I_C=20\text{A}, I_B=1.0\text{A}$		2.2	V
$V_{CE(sat)2}$	Collector-Emitter Saturation Voltage	$I_C=40\text{A}, I_B=5.0\text{A}$		5.0	V
$V_{BE(sat)1}$	Base-Emitter Saturation Voltage	$I_C=20\text{A}, I_B=400\text{mA}$		2.5	V
$V_{BE(sat)2}$	Base-Emitter Saturation Voltage	$I_C=20\text{A}, I_B=400\text{mA}; T_c=100^\circ\text{C}$		2.5	V
I_{CER}	Collector Cutoff Current	$V_{CB}=600\text{V}, I_E=0; R_{BE}=50\text{m}\Omega$		5.0	mA
I_{CEV}	Collector Cutoff Current	$V_{CE}=400\text{V}, I_B=0; V_{BE}=1.5\text{V}$		0.25	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=2\text{V}; I_C=0$		175	mA
h_{FE}	DC Current Gain	$I_C=10\text{A}; V_{CE}=5\text{V}$	50	600	

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