

isc Silicon NPN Darlington Power Transistor

MJ10005

DESCRIPTION

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

APPLICATIONS

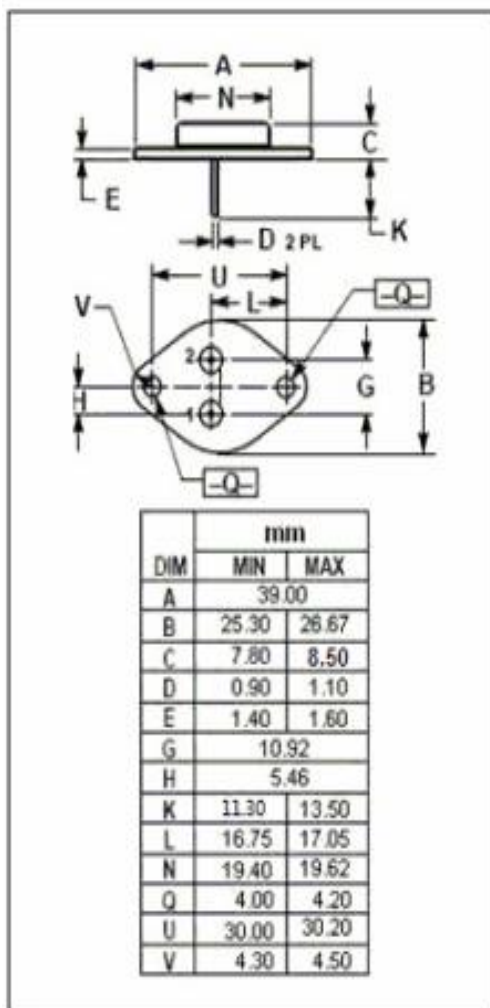
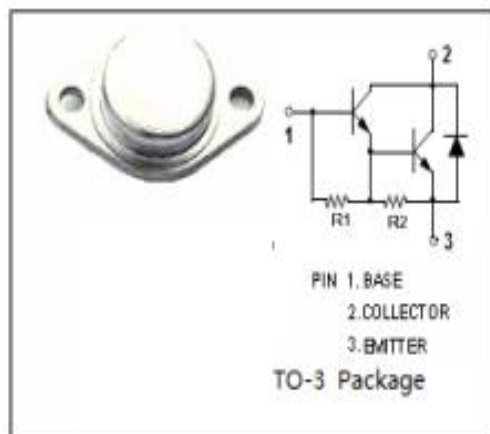
- Electronic ignition
- Alternator regulator
- Motor controls

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	500	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	20	A
I_{CM}	Collector Current-Peak	30	A
I_B	Base Current- Continuous	2.5	A
P_C	Collector Power Dissipation	175	W
T_j	Max.Junction Temperature	200	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-65~200	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance,Junction to Case	1.0	$^{\circ}\text{C/W}$



isc Silicon NPN Darlington Power Transistor

MJ10005

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 250\text{mA}, I_B = 0$	400		V
$V_{CE(sat)1}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{A}, I_B = 400\text{mA}$		1.9	V
$V_{CE(sat)2}$	Collector-Emitter Saturation Voltage	$I_C = 20\text{A}, I_B = 2.0\text{A}$		3.0	V
$V_{BE(sat)1}$	Base-Emitter Saturation Voltage	$I_C = 10\text{A}, I_B = 400\text{mA}$		2.5	V
$V_{BE(sat)2}$	Base-Emitter Saturation Voltage	$I_C = 10\text{A}, I_B = 400\text{mA}; T_c=100^{\circ}\text{C}$		2.5	V
I_{CER}	Collector Cutoff Current	$V_{CB}=400\text{V}, I_E = 0; R_{BE}=50\text{m}\Omega$		5	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-1}	DC Current Gain	$I_C = 5\text{A}; V_{CE}= 5\text{V}$	50	600	
h_{FE-2}	DC Current Gain	$I_C = 10\text{A}; V_{CE}=5\text{V}$	40	400	

NOTICE:

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.