

# isc Silicon NPN Darlington Power Transistor

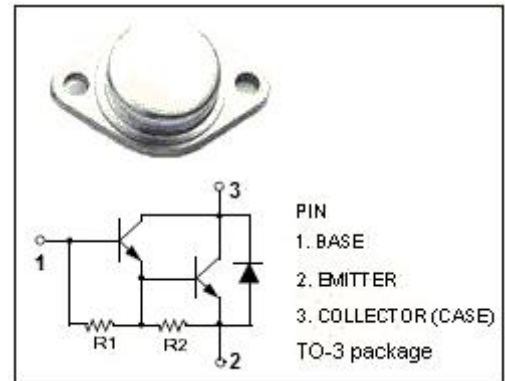
## MJ3001

### DESCRIPTION

- Built-in Base-Emitter Shunt Resistors
- High DC current gain-  
 $h_{FE} = 1000$  (Min) @  $I_C = 5A$
- Collector-Emitter Breakdown Voltage-  
 $V_{(BR)CEO} = 80V$ (Min)
- Complement to PNP type MJ2501
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

- Designed for use as output devices in complementary general purpose amplifier applications.

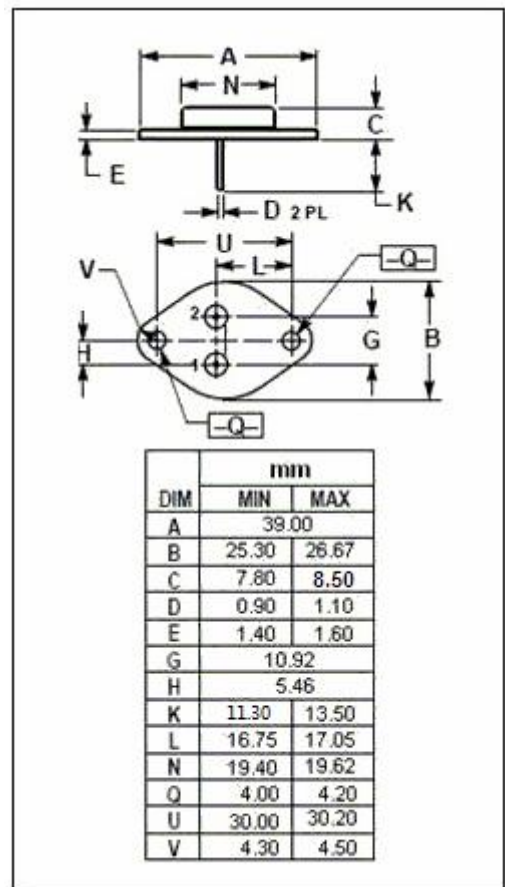


### ABSOLUTE MAXIMUM RATINGS( $T_C=25^{\circ}C$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	80	V
$V_{CEO}$	Collector-Emitter Voltage	80	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	10	A
$I_B$	Base Current	0.2	A
$P_C$	Collector Power Dissipation@ $T_C=25^{\circ}C$	150	W
$T_J$	Junction Temperature	200	$^{\circ}C$
$T_{stg}$	Storage Temperature	-55~200	$^{\circ}C$

### 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

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C= 50\text{mA}; I_B= 0$	80		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C= 5\text{A}; I_B= 20\text{mA}$		2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C= 10\text{A}; I_B= 50\text{mA}$		4.0	V
$V_{BE(on)}$	Base-Emitter On voltage	$I_C= 5\text{A}; V_{CE}= 3\text{V}$		3.0	V
$I_{CEO}$	Collector Cutoff current	$V_{CE}= 40\text{V}; I_B= 0$		1.0	mA
$I_{CBO}$	Collector Cutoff current	$V_{CB}= 80\text{V}; I_E= 0, T_C=150^{\circ}\text{C}$		1.0	mA
$I_{EBO}$	Emitter Cut-off current	$V_{EB}= 5\text{V}; I_C= 0$		2.0	mA
$h_{FE}$	DC Current Gain	$I_C= 5\text{A}; V_{CE}= 3\text{V}$	1000		

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