

**isc Silicon NPN Darlington Power Transistor**

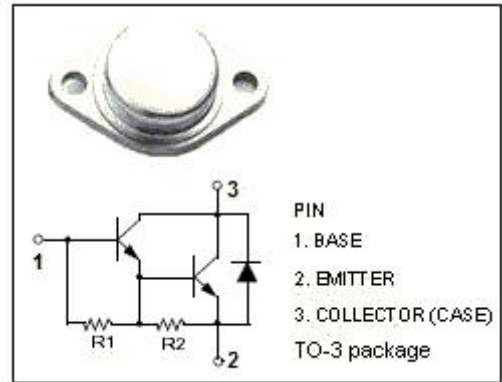
**MJ11016**

**DESCRIPTION**

- Collector-Emitter Breakdown Voltage  
:  $V_{(BR)CEO} = 120V(\text{Min.})$
- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min.}) @ I_C = 20A$
- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = 3.0V(\text{Max.}) @ I_C = 20A$
- Complement to the PNP MJ11015
- 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.

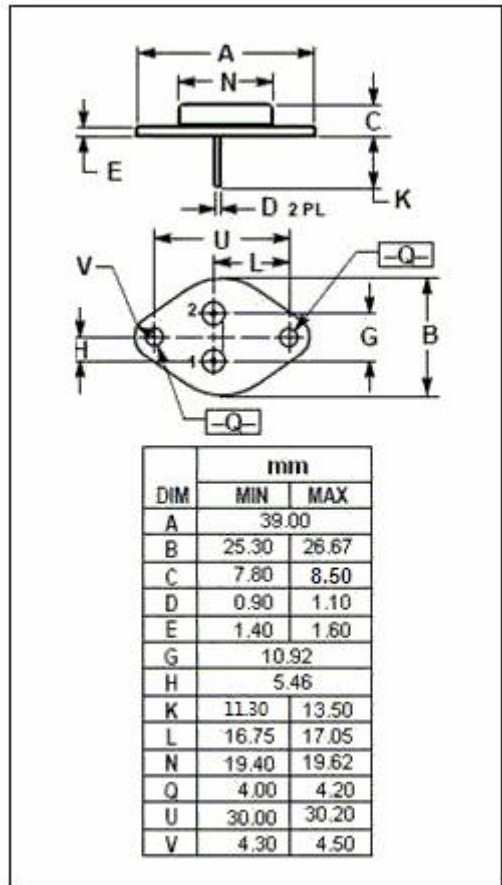


**ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	120	V
$V_{CEO}$	Collector-Emitter Voltage	120	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	30	A
$I_B$	Base Current-Continuous	1	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	200	W
$T_j$	Junction Temperature	200	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~+200	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.87	$^\circ\text{C/W}$



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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=50\text{mA}; I_B=0$	120			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=20\text{A}; I_B=0.2\text{A}$			3.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=30\text{A}; I_B=0.3\text{A}$			4.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=20\text{A}; I_B=0.2\text{A}$			3.5	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=30\text{A}; I_B=0.3\text{A}$			5.0	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=120\text{V}; I_E=0$ $V_{CB}=120\text{V}; I_E=0; T_c=150^\circ\text{C}$			1.0 5.0	mA
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=120\text{V}; I_B=0$			1.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			5.0	mA
$h_{FE-1}$	DC Current Gain	$I_C=20\text{A}, V_{CE}=5\text{V}$	1000			
$h_{FE-2}$	DC Current Gain	$I_C=30\text{A}, V_{CE}=5\text{V}$	200			

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