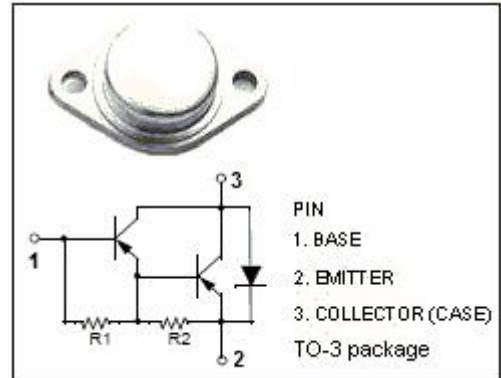


# isc Silicon PNP Darlington Power Transistor

# MJ11017

## DESCRIPTION

- High DC Current Gain-  
:  $h_{FE} = 400(\text{Min}) @ I_C = -10\text{A}$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(\text{SUS})} = -150\text{V}(\text{Min})$
- Low Collector-Emitter Saturation Voltage-  
:  $V_{CE(\text{sat})} = -2.0\text{V}(\text{Max}) @ I_C = -10\text{A}$   
=  $-3.4\text{V}(\text{Max}) @ I_C = -15\text{A}$
- Complement to the NPN MJ11018
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



## APPLICATIONS

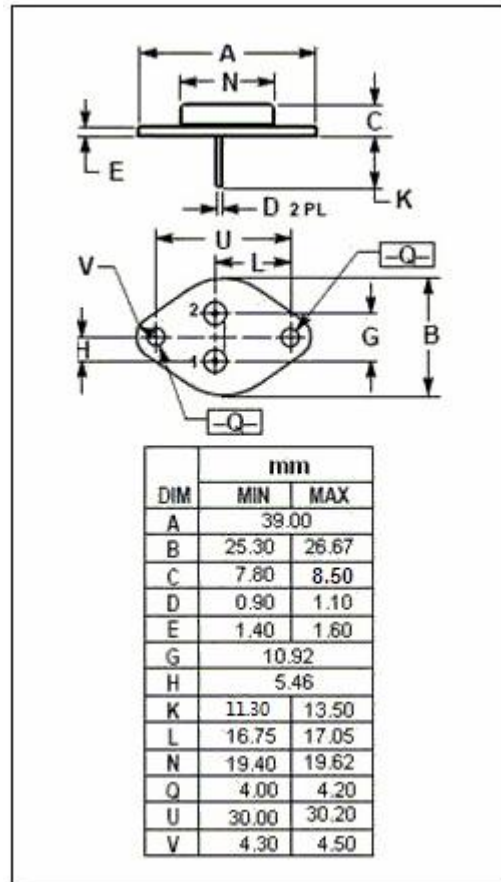
- Designed for general purpose amplifiers ,low frequency switching and motor control applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-150	V
$V_{CEO}$	Collector-Emitter Voltage	-150	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 @ $T_c=25^\circ\text{C}$	175	W
$T_j$	Junction Temperature	175	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~200	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

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



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE0(sus)}$	Collector-Emitter Sustaining Voltage	$I_C = -50\text{mA}, I_B = 0$	-150			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = -10\text{A}, I_B = -0.1\text{A}$			-2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = -15\text{A}, I_B = -0.15\text{A}$			-3.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -15\text{A}, I_B = -0.15\text{A}$			-3.8	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -10\text{A}; V_{CE} = -5\text{V}$			-2.8	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 150\text{V}; I_E = 0$ $V_{CB} = 150\text{V}; I_E = 0; T_C = 150^\circ\text{C}$			-0.5 -5.0	mA
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = -150\text{V}, I_B = 0$			-1	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -5\text{V}; I_C = 0$			-2	mA
$h_{FE-1}$	DC Current Gain	$I_C = -10\text{A}; V_{CE} = -5\text{V}$	400		15000	
$h_{FE-2}$	DC Current Gain	$I_C = -15\text{A}; V_{CE} = -5\text{V}$	100			
$C_{OB}$	Output Capacitance	$I_E = 0; V_{CB} = -10\text{V}, f = 0.1\text{MHz}$			600	pF

## Switching times

$t_d$	Delay Time			75		ns
$t_r$	Rise Time	$I_C = -10\text{A}, V_{CC} = -100\text{V};$ $I_{B1} = -0.1\text{A}; V_{BE(off)} = -5\text{V};$ Duty Cycle $\leq 1.0\%$		0.5		$\mu\text{s}$
$t_s$	Storage Time			2.7		$\mu\text{s}$
$t_f$	Fall Time			2.5		$\mu\text{s}$

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