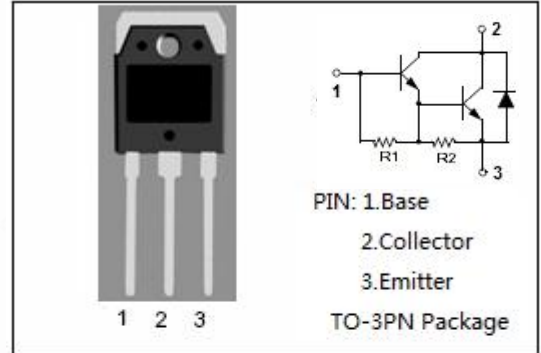


isc Silicon NPN Darlington Power Transistor

MJH11020

DESCRIPTION

- High DC Current Gain-
: $h_{FE} = 400(\text{Min}) @ I_C = 10A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = 200V(\text{Min})$
- Low Collector-Emitter Saturation Voltage-
: $V_{CE(\text{sat})} = 2.5V(\text{Max}) @ I_C = 10A$
= $4.0V(\text{Max}) @ I_C = 15A$
- Complement to Type MJH11019

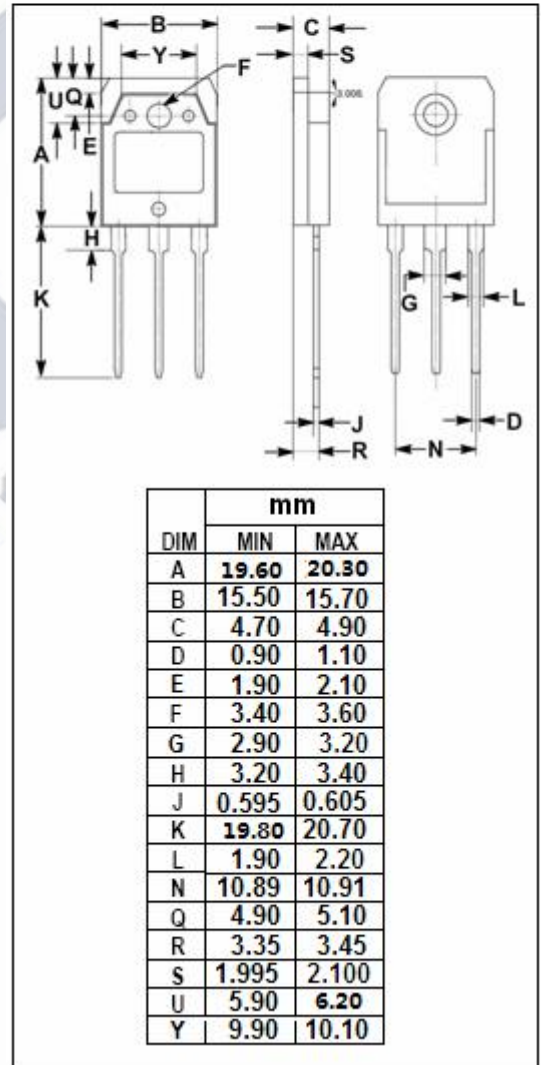


APPLICATIONS

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



THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.83	$^\circ\text{C}/\text{W}$

isc Silicon NPN Darlington Power Transistor**MJH11020****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	$I_C=50\text{mA}, I_B=0$	200			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}, I_B=0.1\text{A}$			2.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=15\text{A}, I_B=0.15\text{A}$			4.0	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	$V_{CBO}=200\text{V}; I_E=0$ $V_{CBO}=200\text{V}; I_E=0; T_C=150^\circ\text{C}$			0.5 5.0	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=200\text{V}, I_B=0$			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	$I_E=0; V_{CB}=10\text{V}, f=0.1\text{MHz}$			400	pF

Switching times

t_d	Delay Time			150		ns
t_r	Rise Time	$I_C=10\text{A}, V_{CC}=100\text{V};$ $I_B=0.1\text{A}; V_{BE(off)}=5\text{V};$ Duty Cycle $\leq 2.0\%$		1.2		μs
t_s	Storage Time			4.4		μs
t_f	Fall Time			2.5		μs