

isc Silicon NPN Darlington Power Transistor
MJE5742H
DESCRIPTION

- Collector-Emitter Breakdown Voltage : $V_{CE0} = 400V(\text{Min})$
- Low Collector-Emitter Saturation Voltage
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

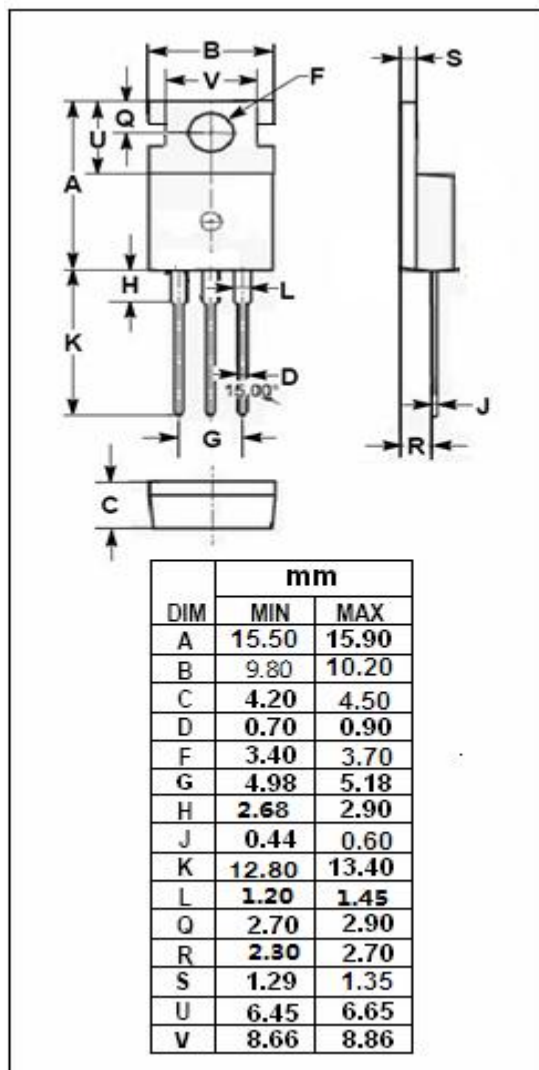
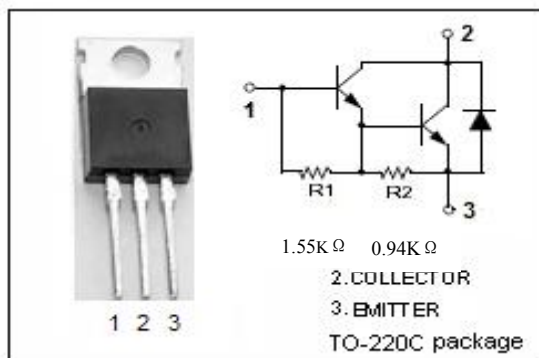
- Switching Regulators
- Inverters
- Solenoid and relay drivers
- Motor control

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEV}	Collector-Base Voltage	650	V
$V_{CE0(\text{SUS})}$	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	8	A
I_{CM}	Collector Current-Peak	16	A
I_B I_{BM}	Base Current- Continuous ---Peak	2.5 5	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	80	W
T_j	Junction Temperature	-65~150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

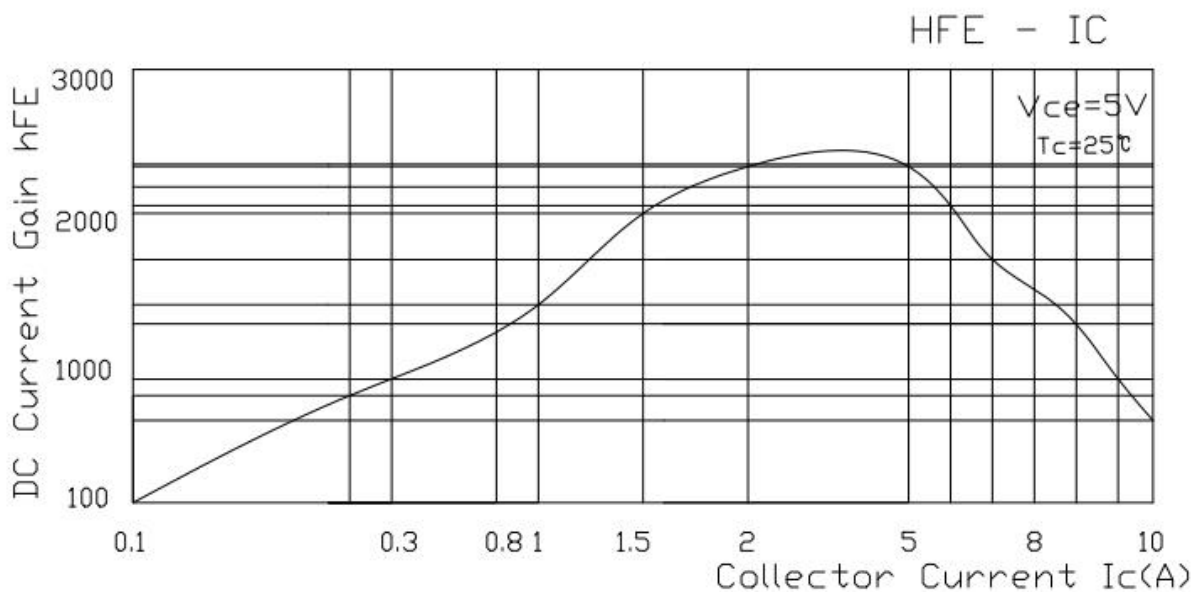
SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.56	$^\circ\text{C/W}$



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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Breakdown Voltage	$I_C=50\text{mA}, I_B=0$	400			V
I_{CEV}	Collector Cutoff Current	$V_{CEV}=650\text{V}, T_C=25^\circ\text{C}$ $T_C=100^\circ\text{C}$			1 5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=8\text{V}; I_C=0$			10	mA
h_{FE}	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=5\text{V}$ $I_C=4\text{A}; V_{CE}=5\text{V}$	700 2000			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=0.2\text{A}$ $I_C=8\text{A}; I_B=0.4\text{A}$ $I_C=4\text{A}; I_B=0.2\text{A}, T_C=100^\circ\text{C}$			2.0 3.0 2.2	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=0.2\text{A}$ $I_C=8\text{A}; I_B=0.4\text{A}$ $I_C=4\text{A}; I_B=0.2\text{A}, T_C=100^\circ\text{C}$			2.5 3.5 2.4	V

TYPICAL CHARACTERISTICS DC Current Gain



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