

isc Silicon NPN Power Transistor
2SD1158
DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 50V(\text{Min})$
- High DC Current Gain-
: $h_{FE} = 250V(\text{Min.}) @ I_C = 1A$
- Low Collector Saturation Voltage
- High Reliability
- Minimum Lot-to-Lot variations for robust device performance and reliable operati

APPLICATIONS

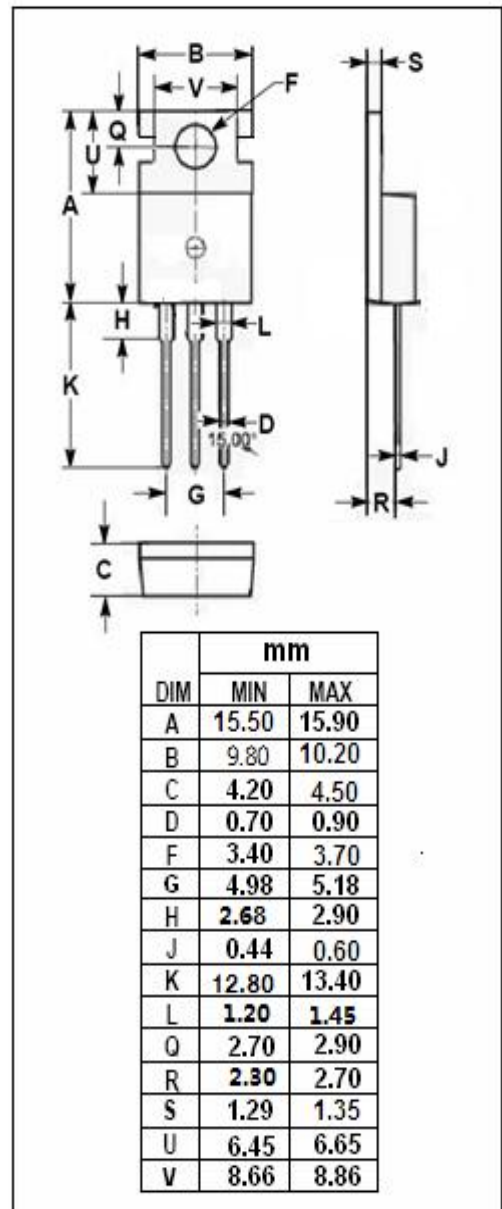
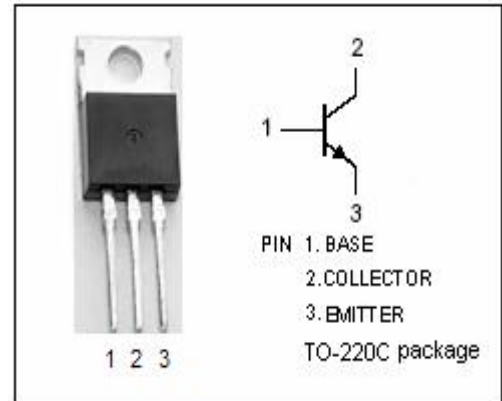
- Switching regulators
- DC-DC converter
- Solid state relay
- General purpose power amplifiers

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current-Continuous	8	A
I_B	Base Current-Continuous	2	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	40	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R_{th-j-c}	Thermal Resistance, Junction to Case	1.25	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 10mA; I _B = 0	50			V
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA; I _B = 0	50			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 0.1mA; I _E = 0	80			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 0.1mA; I _C = 0	10			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 2A; I _B = 100mA			0.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 2A; I _B = 100mA			1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 80V; I _E = 0			100	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 10V; I _C = 0			100	μ A
h _{FE}	DC Current Gain	I _C = 1A; V _{CE} = 5V	250			

Switching times

t _{on}	Turn-on Time	I _C = 5A, I _{B1} = I _{B2} = 0.5A; R _L = 6 Ω; P _W = 20 μ s; Duty ≤ 2%			0.5	μ s
t _{stg}	Storage Time				3.0	μ s
t _f	Fall Time				0.8	μ s

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