

isc Silicon NPN Power Transistor

2SC3158

DESCRIPTION

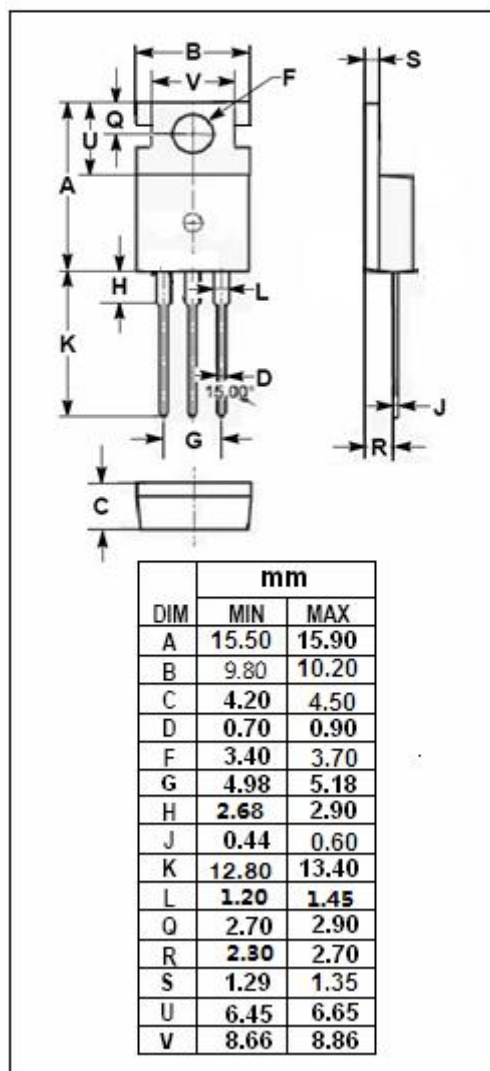
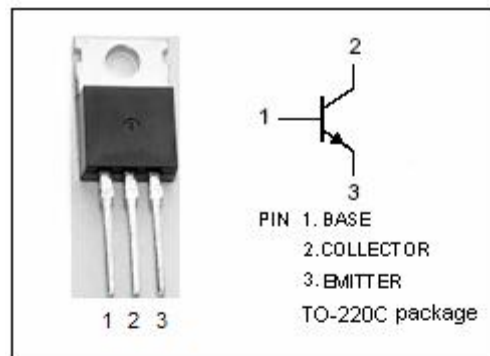
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 1.0V(\text{Max.}) @ I_C = 3A$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for switching regulator, DC-DC converter and high frequency power amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	500	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	7	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current-Continuous	3.5	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	60	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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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 Sustaining Voltage	$I_C=3\text{A}; I_B=0.6\text{A}; L=1\text{mH}$	400			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.6\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.6\text{A}$			1.2	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=400\text{V}; I_E=0$			10	μA
I_{CEX}	Collector Cutoff Current	$V_{CE}=400\text{V}; V_{BE(off)}=-1.5\text{V}$ $V_{CE}=400\text{V}; V_{BE(off)}=-1.5\text{V}; T_a=125^{\circ}\text{C}$			10 1.0	μA mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	μA
h_{FE-1}	DC Current Gain	$I_C=0.1\text{A}; V_{CE}=5\text{V}$	20		80	
h_{FE-2}	DC Current Gain	$I_C=1\text{A}; V_{CE}=5\text{V}$	20		80	
h_{FE-3}	DC Current Gain	$I_C=3\text{A}; V_{CE}=5\text{V}$	10			

Switching times

t_{on}	Turn-On Time	$I_C=3\text{A}; I_{B1}=-I_{B2}=0.6\text{A};$ $R_L=50\Omega; V_{CC}\approx 150\text{V}$			1.0	μs
t_{stg}	Storage Time				2.5	μs
t_f	Fall Time				1.0	μs

◆ h_{FE-2} Classifications

M	L	K
20-40	30-60	40-80

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