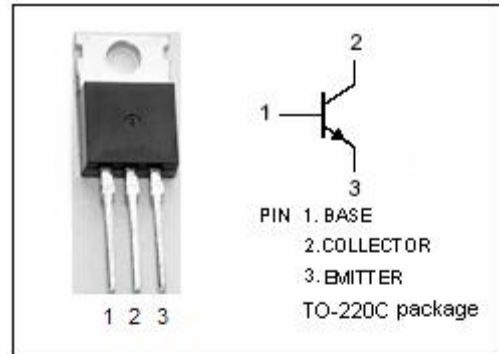


**isc Silicon NPN Power Transistor**
**2SC3158**
**DESCRIPTION**

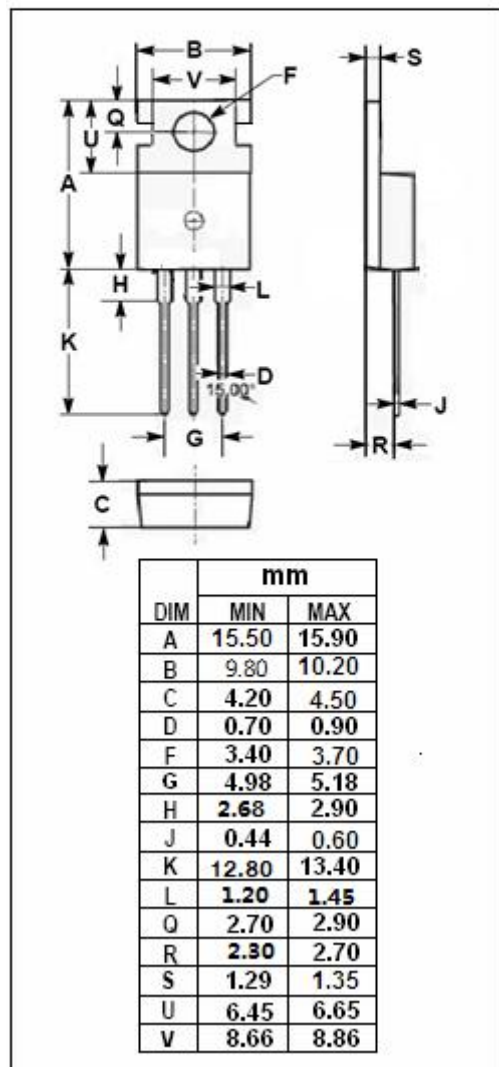
- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = 1.0V(\text{Max.})@I_C = 3A$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**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	$^\circ\text{C}$



**isc Silicon NPN Power Transistor**
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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	$I_C=3\text{A}; I_B=0.6\text{A}; L=1\text{mH}$	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	$\mu\text{A}$
$I_{CEX}$	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	$\mu\text{A}$ mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	$\mu\text{A}$
$h_{FE-1}$	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				1.0	$\mu\text{s}$
$t_{stg}$	Storage Time	$I_C=3\text{A}; I_{B1}=-I_{B2}=0.6\text{A};$ $R_L=50\Omega; V_{CC}\approx 150\text{V}$			2.5	$\mu\text{s}$
$t_f$	Fall Time				1.0	$\mu\text{s}$

**◆  $h_{FE-2}$  Classifications**

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

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