

SPTECH Silicon NPN Power Transistor

2SC3157

DESCRIPTION

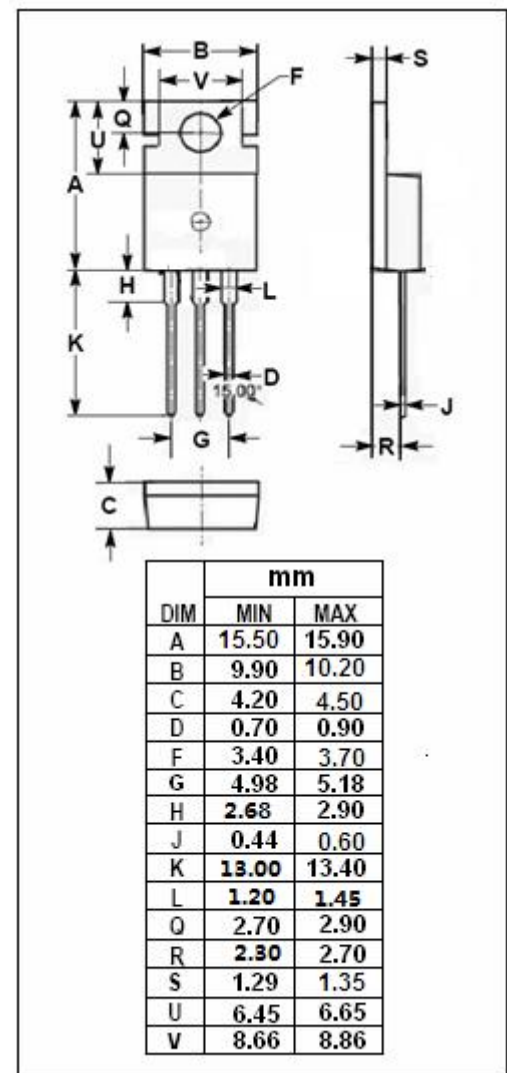
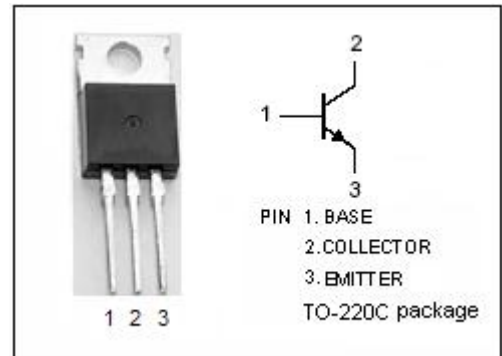
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 0.6V(\text{Max.}) @ I_C = 5A$
- Fast Switching Speed
- Complement to Type 2SA1261

APPLICATIONS

- Developed for high-voltage high-speed switching, and is ideal for use as a driver in devices such as switching regulators, DC/DC converters, and high frequency power amplifiers.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	150	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7.0	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current-Continuous	3.5	A
P_C	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	1.5	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	60	
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	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}$; $I_B=0$	100		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=5.0\text{A}$; $I_B=0.5\text{A}$		0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=5.0\text{A}$; $I_B=0.5\text{A}$		1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=100\text{V}$; $I_E=0$		10	μA
I_{CEX}	Collector Cutoff Current	$V_{CE}=100\text{V}$; $V_{BE(off)}=-1.5\text{V}$ $V_{CE}=100\text{V}$; $V_{BE(off)}=-1.5\text{V}$, $T_a=125^{\circ}\text{C}$		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	$I_C=0.5\text{A}$; $V_{CE}=5\text{V}$	40	200	
h_{FE-2}	DC Current Gain	$I_C=3.0\text{A}$; $V_{CE}=5\text{V}$	40	200	
h_{FE-3}	DC Current Gain	$I_C=5.0\text{A}$; $V_{CE}=5\text{V}$	20		

Switching times

t_{on}	Turn-on Time	$I_C=5.0\text{A}$, $R_L=10\Omega$, $I_{B1}=-I_{B2}=0.5\text{A}$, $V_{CC}\approx 50\text{V}$		0.5	μs
t_{stg}	Storage Time			1.5	μs
t_f	Fall Time			0.5	μs

◆ h_{FE-2} Classifications

M	L	K
40-80	60-120	100-200