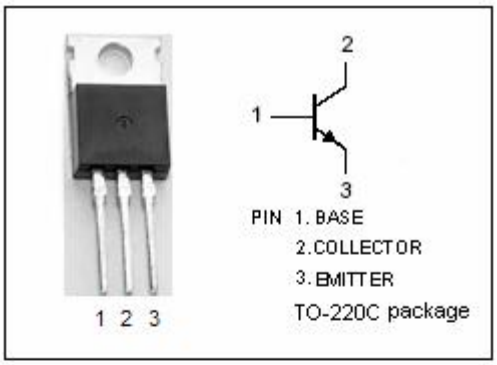
isc Silicon NPN Power Transistor — 2SC3159



DESCRIPTION

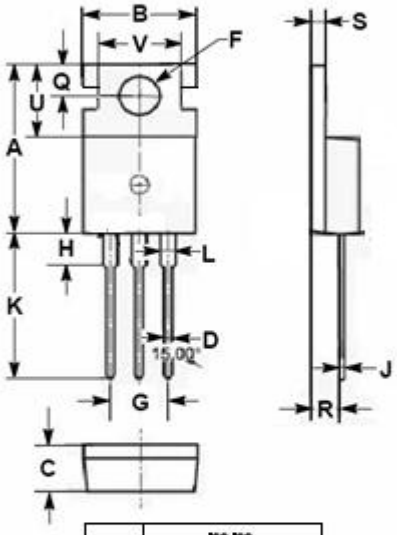
- Low Collector Saturation Voltage-
  : $V_{CE(sat)}$= 1.0V(Max.)@I_C= 6A
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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	10	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current-Continuous	5.0	A
P_C	Collector Power Dissipation @ T_C=25℃	80	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃



DIM	mm MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

isc Silicon NPN Power Transistor 2SC3159

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 6A; I_B= 1.2A; L= 1mH	400			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 6A; I_B= 1.2A			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 6A; I_B= 1.2A			1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 400V; I_E= 0			10	μA
I_{CEX}	Collector Cutoff Current	V_{CE}= 400V;$V_{BE(off)}$=-1.5V V_{CE}= 400V;$V_{BE(off)}$=-1.5V,T_a=125℃			100 1.0	μA mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			10	μA
h_{FE-1}	DC Current Gain	I_C= 1A; V_{CE}= 5V	15		80	
h_{FE-2}	DC Current Gain	I_C= 3A; V_{CE}= 5V	10			
h_{FE-3}	DC Current Gain	I_C= 6A; V_{CE}= 5V	7			
Switching times						
t_{on}	Turn-On Time	I_C= 6A; I_{B1}= -I_{B2}= 1.2A; R_L= 25Ω; V_{CC}≈ 150V			1.0	μs
t_{stg}	Storage Time				2.5	μs
t_f	Fall Time				0.7	μs