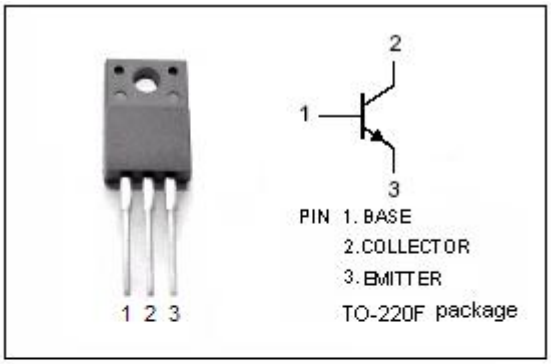
isc Silicon NPN Power Transistor — 2SC4159



DESCRIPTION

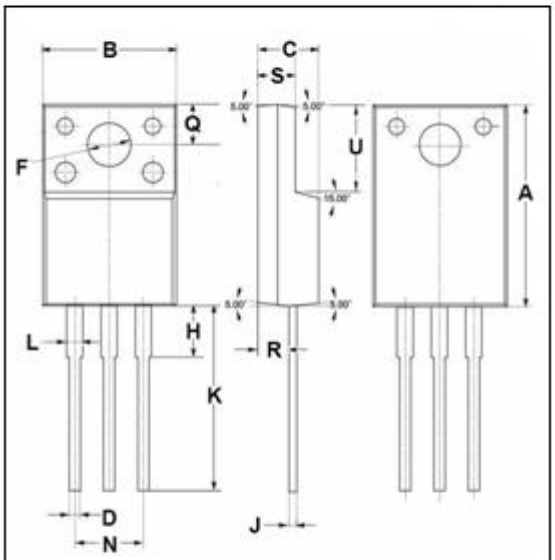
- High Collector-Emitter Breakdown Voltage- $V_{(BR)CEO}$= 160V (Min)
- Large Current Capacity
- Complement to Type 2SA1606
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for high-voltage switching, AF power amplifier, 100W output predrivers.

ABSOLUTE MAXIMUM RATINGS(Ta=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	180	V
V_{CEO}	Collector-Emitter Voltage	160	V
V_{EBO}	Emitter-Base Voltage	6.0	V
I_C	Collector Current-Continuous	1.5	A
I_{CM}	Collector Current-Peak	3	A
P_C	Total Power Dissipation @ T_C=25℃	15	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃



DIM	mm MIN	mm MAX
A	14.95	15.05
B	10.00	10.10
C	4.40	4.60
D	0.75	0.80
F	3.10	3.30
H	3.70	3.90
J	0.50	0.70
K	13.4	13.6
L	1.10	1.30
N	5.00	5.20
Q	2.70	2.90
R	2.20	2.40
S	2.65	2.85
U	6.40	6.60

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C= 1mA; I_E= 0	180			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 1mA; R_{BE}= ∞	160			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E= 1mA; I_C= 0	6			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 500mA; I_B= 50mA		0.3		V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C= 10mA; V_{CE}= 5V			1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 120V; I_E= 0			10	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 4V; I_C= 0			10	μA
h_{FE}	DC Current Gain	I_C= 300mA; V_{CE}= 5V	60		200	
f_T	Current-Gain—Bandwidth Product	I_C= 50mA; V_{CE}= 10V		100		MHz
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f= 1.0MHz		23		pF
Switching Times						
t_{on}	Turn-on Time	I_C= 0.5A, R_L= 40Ω, I_{B1}= -I_{B2}= 50mA, V_{CC}= -20V; P_W= 20μs		0.15		μs
t_{stg}	Storage Time			0.81		μs
t_f	Fall Time			0.48		μs

◆ h_{FE} Classifications

D	E
60-120	100-200

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