

isc Silicon NPN Power Transistor

2SC4159

DESCRIPTION

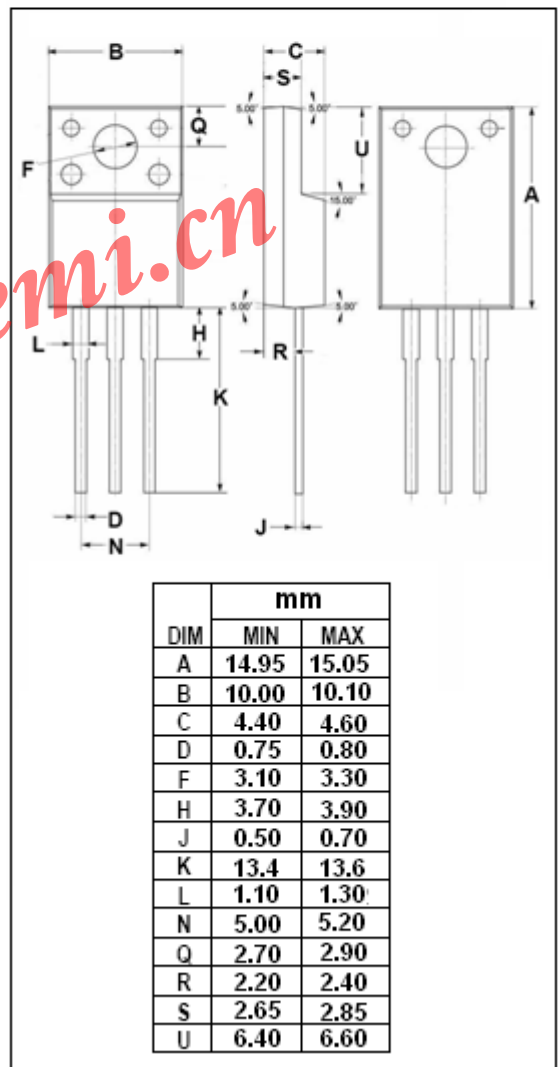
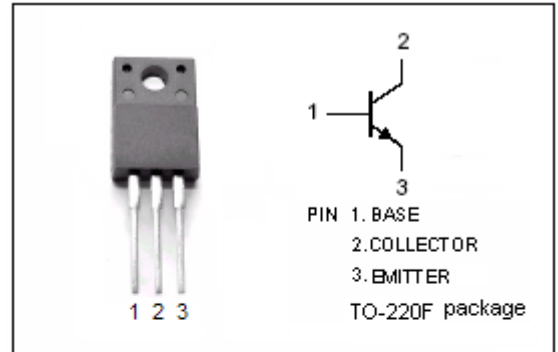
- High Collector-Emitter Breakdown Voltage-
 $V_{(BR)CEO} = 160V$ (Min)
- Large Current Capacity
- Complement to Type 2SA1606

APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

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 @ $T_C = 25^\circ C$	15	W
T_J	Junction Temperature	150	°C
T_{stg}	Storage Temperature Range	-55~150	°C



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ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	180			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}; R_{BE}=\infty$	160			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	6			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=500\text{mA}; I_B=50\text{mA}$		0.3		V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=10\text{mA}; V_{CE}=5\text{V}$			1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=120\text{V}; I_E=0$			10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=4\text{V}; I_C=0$			10	μA
h_{FE}	DC Current Gain	$I_C=300\text{mA}; V_{CE}=5\text{V}$	60		200	
f_T	Current-Gain—Bandwidth Product	$I_C=50\text{mA}; V_{CE}=10\text{V}$		100		MHz
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f=1.0\text{MHz}$		23		pF

Switching Times

t_{on}	Turn-on Time	$I_C=0.5\text{A}, R_L=40\Omega,$ $I_{B1}=-I_{B2}=50\text{mA}, V_{CC}=-20\text{V};$ $P_W=20\mu\text{s}$		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