

isc Silicon NPN Darlington Power Transistor

2SD1559

DESCRIPTION

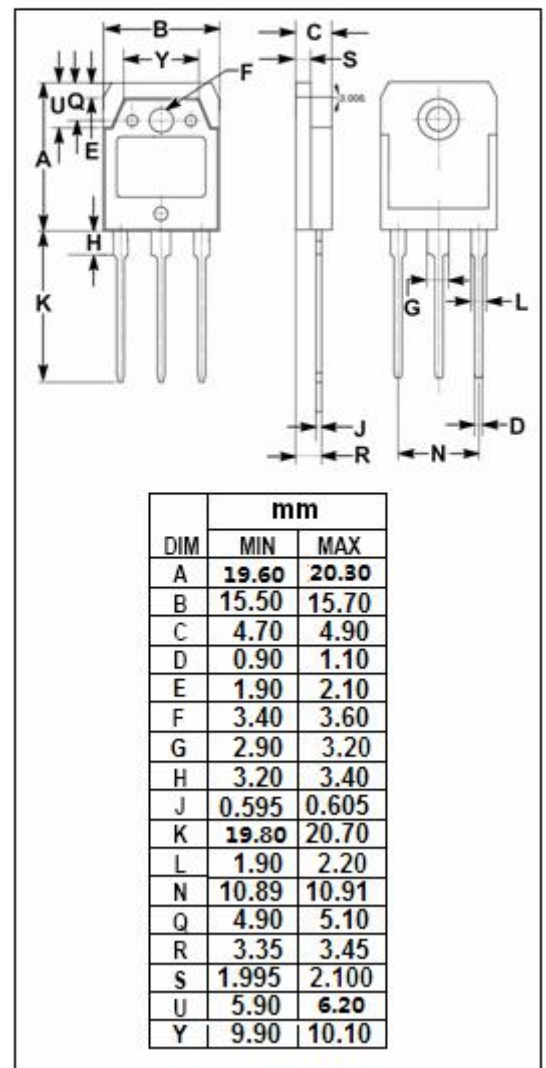
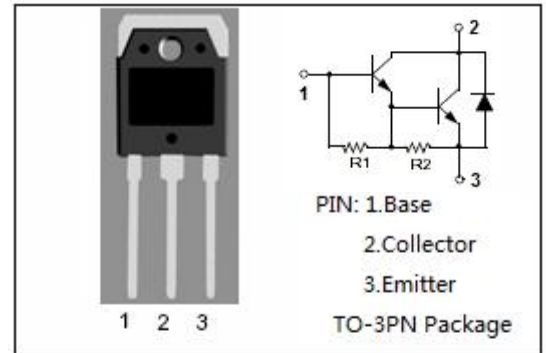
- High DC Current Gain
: $h_{FE} = 1000(\text{Min.}) @ I_C = 10A, V_{CE} = 3V$
- High Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = 100V(\text{Min})$
- Complement to Type 2SB1079
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for low frequency power amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	20	A
I_{CM}	Collector Current-Peak	30	A
I_B	Base Current- Continuous	3	A
P_C	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	100	W
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	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}$, $R_{BE}=\infty$	100			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=0.1\text{mA}$, $I_E=0$	100			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=25\text{mA}$, $R_{BE}=\infty$	100			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=5\text{mA}$, $I_C=0$	7			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}$, $I_B=20\text{mA}$			2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=20\text{A}$, $I_B=200\text{mA}$			3.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}$, $I_B=20\text{mA}$			2.5	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=20\text{A}$, $I_B=200\text{mA}$			3.5	V
I_{CBO}	Collector Cutoff current	$V_{CB}=100\text{V}$, $I_E=0$			0.1	mA
I_{CEO}	Collector Cutoff current	$V_{CE}=80\text{V}$, $R_{BE}=\infty$			1.0	mA
h_{FE}	DC Current Gain	$I_C=10\text{A}$; $V_{CE}=3\text{V}$	1000		20000	

Switching Times

t_{on}	Turn-On Time	$I_C=10\text{A}$, $I_{B1}=I_{B2}=20\text{mA}$		1.0		μs
t_{stg}	Storage Time			9.0		μs
t_f	Fall Time			3.0		μs

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