

isc Silicon NPN Darlington Power Transistor

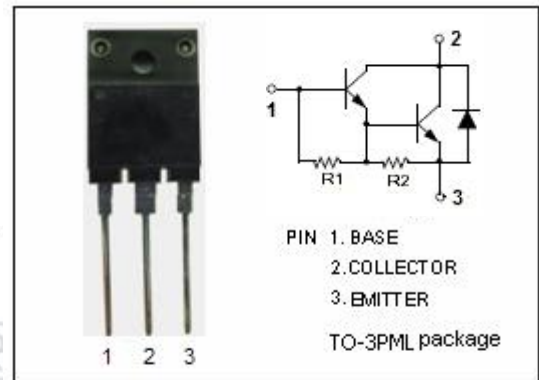
2SD2196

DESCRIPTION

- High DC Current Gain
: $h_{FE} = 1500(\text{Min.}) @ I_C = 10A, V_{CE} = 3V$
- High Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = 200V(\text{Min})$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

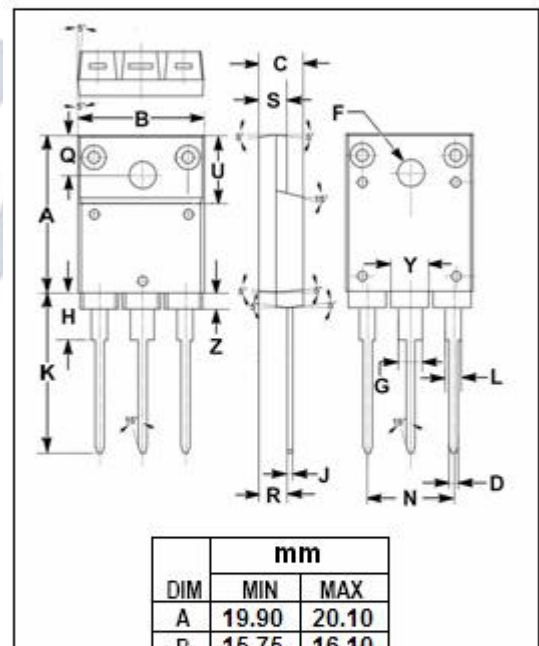
APPLICATIONS

- Designed for general purpose amplifier applications.



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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	200	V
V_{CEO}	Collector-Emitter Voltage	200	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	15	A
I_{CM}	Collector Current-Peak	22	A
I_B	Base Current- Continuous	1	A
I_{BM}	Base Current- Peak	2	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	65	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.92	$^\circ\text{C}/\text{W}$

isc Silicon NPN Darlington Power Transistor**2SD2196****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}, I_B=30\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}, I_B=30\text{mA}$			2.0	V
I_{CBO}	Collector Cutoff current	$V_{CB}=200\text{V}, I_E=0$			0.1	mA
I_{CEO}	Collector Cutoff current	$V_{CE}=200\text{V}, I_B=0$			0.1	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$			5	mA
f_T	Current-Gain—Bandwidth Product	$I_C=1.5\text{A}; V_{CE}=10\text{V}$		20		MHz
h_{FE}	DC Current Gain	$I_C=10\text{A}; V_{CE}=3\text{V}$	1500		30000	

Switching Times

t_{on}	Turn-On Time				2	μs
t_{stg}	Storage Time	$I_C=10\text{A}, I_{B1}=I_{B2}=30\text{mA}; R_L=3\Omega; V_{BB2}=4\text{V}$			12	μs
t_f	Fall Time				5	μs

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