

isc Silicon NPN Darlington Power Transistor

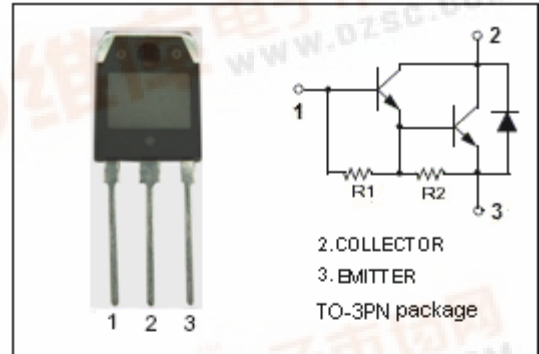
2SD1027

DESCRIPTION

- High DC Current Gain
: $h_{FE} = 1500(\text{Min.}) @ I_C = 10A, V_{CE} = 3V$
- High Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = 200V(\text{Min})$

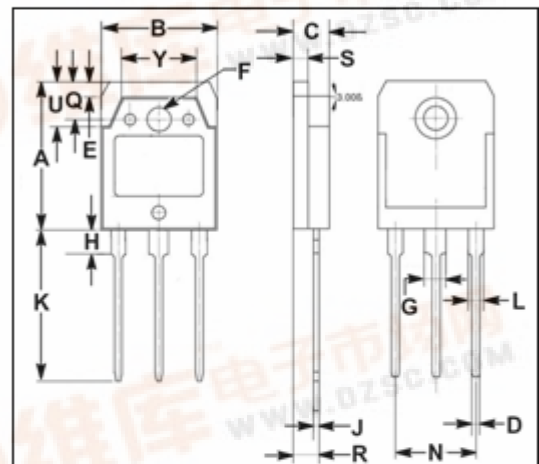
APPLICATIONS

- 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 @ $T_C = 25^\circ\text{C}$	100	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.10
H	3.20	3.40
J	0.595	0.605
K	20.50	20.70
L	1.90	2.10
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.005
U	5.90	6.10
Y	9.90	10.10

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.25	$^\circ\text{C/W}$



isc Silicon NPN Darlington Power Transistor**2SD1027****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	$I_C=0.1\text{A}, I_B=0$	200			V
$V_{CE(sat)}$	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			

Switching Times

t_{on}	Turn-On Time	$I_C=10\text{A}, I_{B1}=-I_{B2}=30\text{mA};$ $R_L=3\Omega; V_{BB2}=4\text{V}$			2.0	μs
t_{stg}	Storage Time				8.0	μs
t_f	Fall Time				5.0	μs