

isc Silicon NPN Darlington Power Transistor
2SD1514
DESCRIPTION

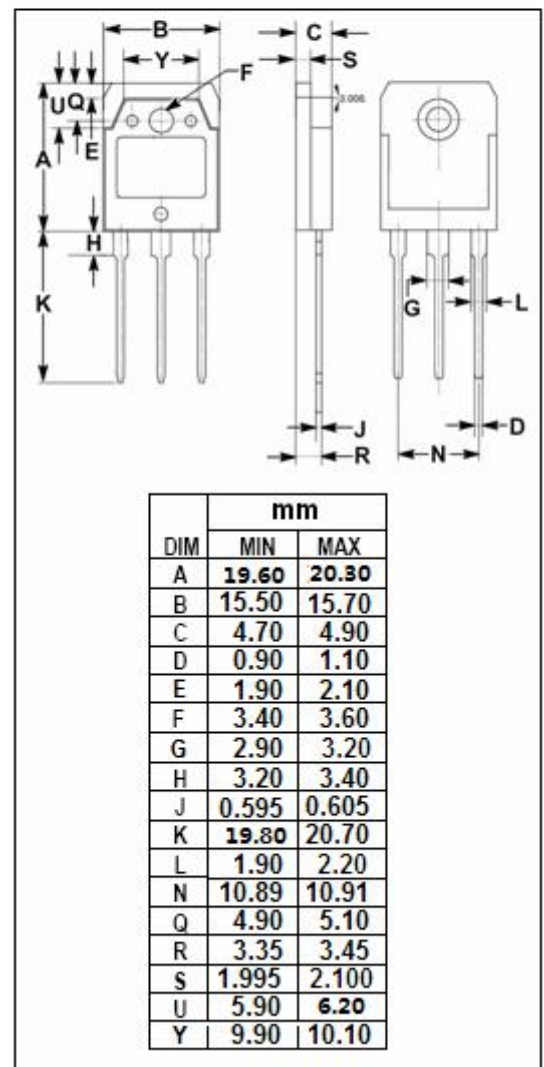
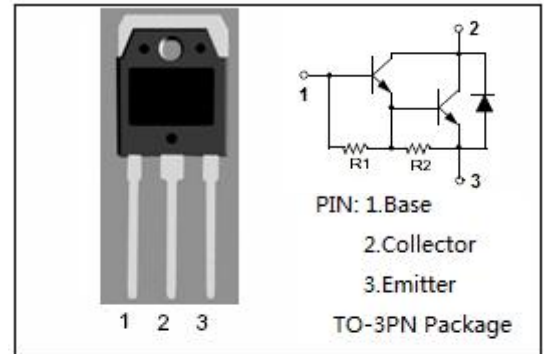
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 100V(\text{Min})$
- High DC Current Gain
: $h_{FE} = 1000(\text{Min}) @ I_C = 10A, V_{CE} = 3V$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for low frequency power amplifier and high current switching 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	15	A
I_{CM}	Collector Current-Peak	20	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°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C =10mA, R _{BE} = ∞	100			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 5mA, I _C = 0	7			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 6A, I _B = 10mA			2.0	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 12A, I _B = 20mA			2.5	V
V _{BE(sat)-1}	Base-Emitter Saturation Voltage	I _C = 6A, I _B = 10mA			2.5	V
V _{BE(sat)-2}	Base-Emitter Saturation Voltage	I _C = 12A, I _B = 20mA			3.0	V
I _{CBO}	Collector Cutoff current	V _{CB} = 100V, I _E = 0			0.1	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0			5	mA
h _{FE-1}	DC Current Gain	I _C = 5A; V _{CE} = 3V	1000		20000	
h _{FE-2}	DC Current Gain	I _C = 10A; V _{CE} = 3V	1000			

Switching Times

t _{on}	Turn-on Time	I _C = 6A, I _{B1} = I _{B2} = 10mA			2.0	μ s
t _{stg}	Storage Time				10	μ s
t _f	Fall Time				7.0	μ s

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