

isc Silicon NPN Power Transistor
2SD1313
DESCRIPTION

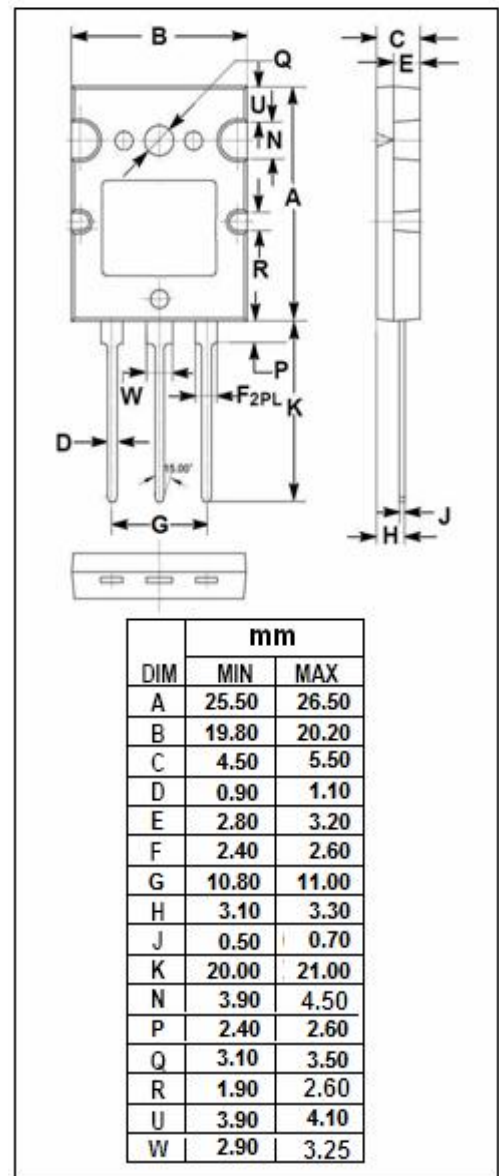
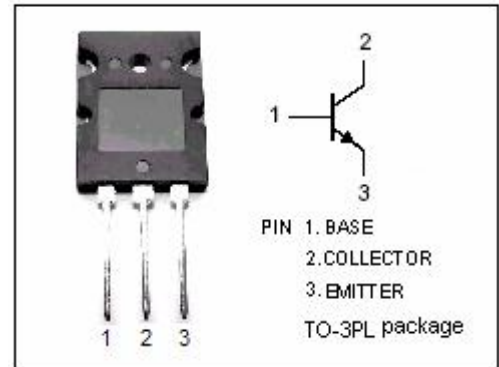
- High Power Dissipation
- High Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 350V(\text{Min})$
- High Speed Switching
- Low Collector Saturation Voltage
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- High power amplifier applications.
- High power switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	800	V
V_{CEO}	Collector-Emitter Voltage	350	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	25	A
I_{CM}	Collector Current-Pulse	35	A
I_B	Base Current-Continuous	10	A
I_{BM}	Base Current- Pulse us	15	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	200	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; I _B = 0	350			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 15A; I _B = 3A			1.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 15A; I _B = 3A			1.7	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 800V; I _E = 0			1	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0			1	mA
h _{FE-1}	DC Current Gain	I _C = 1A; V _{CE} = 5V	15			
h _{FE-2}	DC Current Gain	I _C = 25A; V _{CE} = 5V	6			
C _{OB}	Output Capacitance	I _E =0; V _{CB} = 50V; f _{test} = 1MHz		170		pF
f _T	Current-Gain—Bandwidth Product	I _C = 1A; V _{CE} = 10V		6		MHz

Switching Times

t _{on}	Turn-on Time	I _C = 15A; I _{B1} = I _{B2} = 3A; R _L = 13.3 Ω; V _{CC} ≈ 200V P _W =20 μ s; Duty Cycle ≤ 1%		0.8		μ s
t _{stg}	Storage Time			3.0		μ s
t _f	Fall Time			0.5		μ s

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