

isc Silicon NPN Darlington Power Transistor

2SD1314

DESCRIPTION

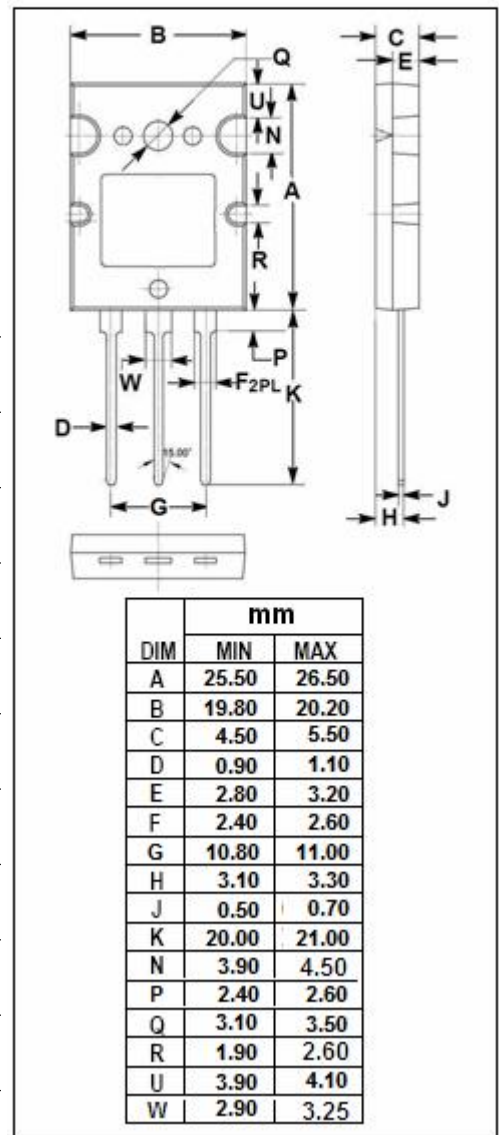
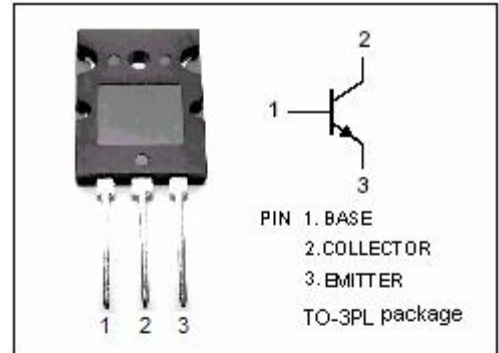
- High DC Current Gain
: $h_{FE} = 100(\text{Min}) @ I_C = 15\text{A}$
- Collector-Emitter Sustaining Voltage-
: $V_{CE0(\text{SUS})} = 450\text{V}(\text{Min})$
- Fast Switching Speed
- Low Collector-Emitter Saturation Voltage-
: $V_{CE(\text{sat})} = 2.0\text{V}(\text{Max}) @ I_C = 15\text{A}$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for high power switching and motor control applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	15	A
I_{CM}	Collector Current-peak	30	A
I_B	Base Current	1.0	A
P_C	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	150	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



isc Silicon NPN Darlington Power Transistor**2SD1314****ELECTRICAL CHARACTERISTICS****T_c=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 30mA; I _B = 0	450			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 15A; I _B = 0.4A			2.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 15A; I _B = 0.4A			2.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 600V; I _E = 0			1	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 6V; I _C = 0			10	mA
h _{FE}	DC Current Gain	I _C = 15A; V _{CE} = 5V	100			
C _{OB}	Output Capacitance	I _E = 0 ; V _{CB} = 50V, f _{test} = 1MHz		150		pF

Switching Times; Resistive Load

t _{on}	Turn-on Time	I _{B1} = -I _{B2} = 0.4A, V _{CC} ≈ 300V;			1.0	μs
t _{stg}	Storage Time				12	μs
t _f	Fall Time				3.0	μs

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