

isc Silicon NPN Power Transistor

3DD13009

DESCRIPTION

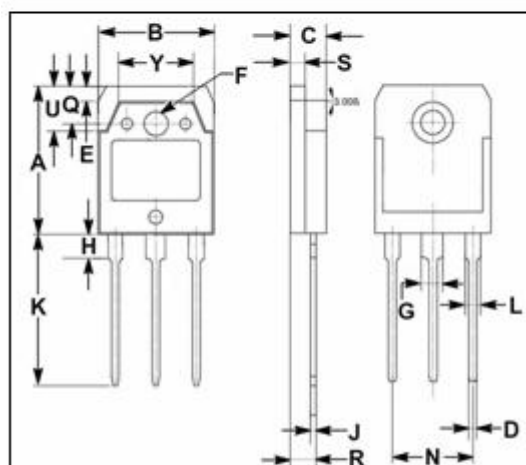
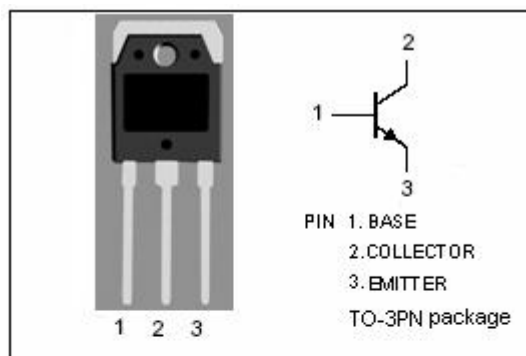
- Collector–Emitter Sustaining Voltage
: $V_{CE(SUS)} = 400V(\text{Min.})$
- Collector Saturation Voltage
: $V_{CE(sat)} = 1.5 (\text{Max}) @ I_C = 8.0A$
- Switching Time
: $t_f = 0.7 \mu s(\text{Max.}) @ I_C = 8.0A$
- 100% tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for use in high-voltage, high-speed, power switching in inductive circuit, they are particularly suited for 115 and 220V switch mode applications such as switching regulators, inverters, Motor controls, Solenoid/Relay drivers and deflection circuits.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector- Base Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current-Continuous	12	A
I_{CM}	Collector Current-peak	24	A
I_B	Base Current	6	A
P_C	Collector Power Dissipation $T_C = 25^\circ C$	130	W
T_j	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature Range	-65~150	$^\circ C$



DIM	mm	
	MIN	MAX
A	19.60	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	3.20
H	3.20	3.40
J	0.595	0.605
K	20.00	20.70
L	1.90	2.20
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.100
U	5.90	6.10
Y	9.90	10.10

isc Silicon NPN Power Transistor**3DD13009****ELECTRICAL CHARACTERISTICS****T_c =25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEQ(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 10mA; I _B = 0	400			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 5A ;I _B = 1A			1.0	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 8A ;I _B = 1.6A			1.5	V
V _{CE(sat)-3}	Collector-Emitter Saturation Voltage	I _C = 12A ;I _B = 3A			3.0	V
V _{BE(sat)-1}	Base-Emitter Saturation Voltage	I _C = 5A ;I _B = 1A			1.2	V
V _{BE(sat)-2}	Base-Emitter Saturation Voltage	I _C = 8A ;I _B = 1.6A			1.6	V
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0			0.1	mA
h _{FE-1}	DC Current Gain	I _C = 5A; V _{CE} = 5V	8		40	
h _{FE-2}	DC Current Gain	I _C = 8A; V _{CE} = 5V	6		30	
f _T	Current-Gain—Bandwidth Product	I _C = 0.5 A; V _{CE} = 10V;	4			MHz
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f _{test} = 0.1MHz		180		pF

Switching Times; Resistive Load

T _{on}	Turn ON Time	I _C = 8A; V _{CC} = 125V; I _{B1} = I _{B2} = 1.6A; R _L =15.6 Ω ;			1.1	μ s
t _s	Storage Time				3.0	μ s
t _f	Fall Time				0.7	μ s

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