

isc Silicon NPN Power Transistor

2SC4549

DESCRIPTION

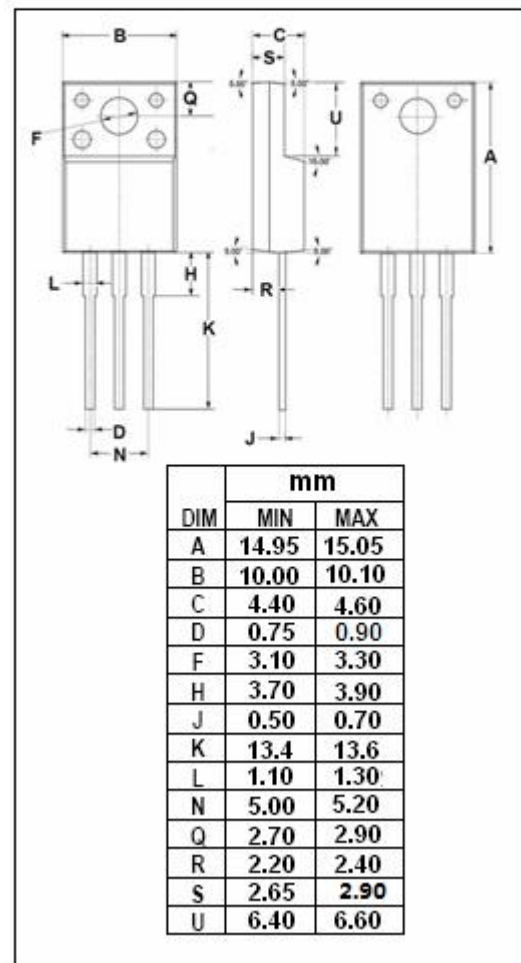
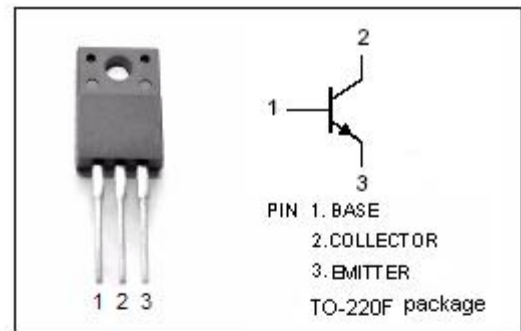
- Collector-Emitter Sustaining Voltage-
: $V_{CE(SUS)} = 60V(\text{Min})$
- High DC Current Gain-
: $h_{FE} = 100(\text{Min})@ (V_{CE} = 2V, I_C = 1A)$
- Low Saturation Voltage-
: $V_{CE(sat)} = 0.3V(\text{Max})@ (I_C = 3A, I_B = 0.15A)$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for use as a driver in DC/DC converters and actuators.

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	60	V
V_{EBO}	Emitter-Base Voltage	7.0	V
I_C	Collector Current-Continuous	5.0	A
I_{CM}	Collector Current-Pulse	10	A
I_B	Base Current-Continuous	2.5	A
P_T	Total Power Dissipation @ $T_C = 25^\circ\text{C}$	25	W
	Total Power Dissipation @ $T_a = 25^\circ\text{C}$	2.0	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 3.0A ; I _B = 0.3A, L= 1mH	60			V
V _{CEX(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 3.0A ; I _{B1} = -I _{B2} = 0.3A, V _{BE(OFF)} =-1.5V, L=180 μ H,clamped	60			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 0.15A			0.3	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 4A; I _B = 0.2A			0.5	V
V _{BE(sat)-1}	Base-Emitter Saturation Voltage	I _C = 3A; I _B = 0.15A			1.2	V
V _{BE(sat)-2}	Base-Emitter Saturation Voltage	I _C = 4A; I _B = 0.2A			1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 60V ; I _E = 0			10	μ A
I _{CER}	Collector Cutoff Current	V _{CE} = 60V ; R _{BE} = 50 Ω , T _a =125°C			1.0	mA
I _{CEx}	Collector Cutoff Current	V _{CE} = 60V; V _{BE(off)} = -1.5V V _{CE} = 60V; V _{BE(off)} = -1.5V, T _a =125°C			10 1.0	μ A mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			10	μ A
h _{FE-1}	DC Current Gain	I _C = 0.5A ; V _{CE} = 2V	100			
h _{FE-2}	DC Current Gain	I _C = 1.0A ; V _{CE} = 2V	100		400	
h _{FE-3}	DC Current Gain	I _C = 3.0A ; V _{CE} = 2V	60			
C _{OB}	Output Capacitance	I _E = 0 ; V _{CB} = 10V;f= 1.0MHz		70		pF
f _T	Current-Gain—Bandwidth Product	I _C = 0.5A ; V _{CE} = 10V		150		MHz

Switching times

t _{on}	Turn-on Time	I _C = 3.0A ,R _L = 17 Ω , I _{B1} = -I _{B2} = 0.15A,V _{CC} ≈ 50V			0.3	μ s
t _{stg}	Storage Time				1.5	μ s
t _f	Fall Time				0.3	μ s

◆ h_{FE-2} Classifications

M	L	K
100-200	150-300	200-400

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