

isc Silicon NPN Power Transistor

2SC4331

DESCRIPTION

- Available for high-current control in small dimension
- Low collector saturation voltage
- Fast switching speed
- High DC current gain and excellent linearity
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

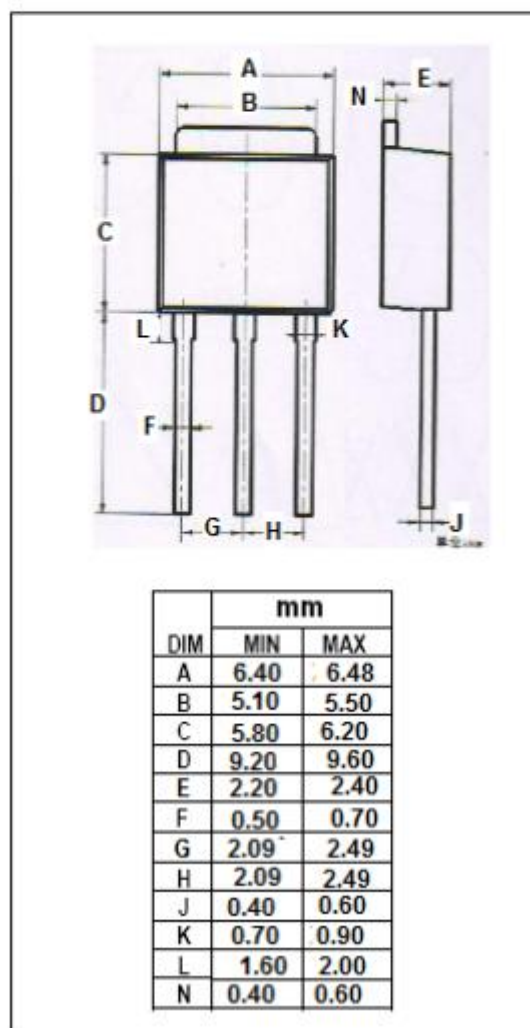
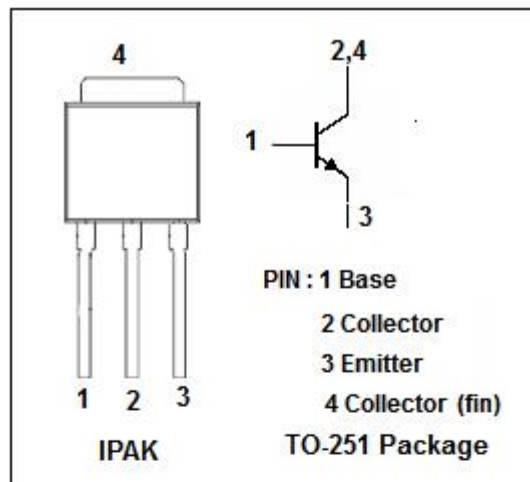
- This transistor is ideal for use in Switching regulators, DC/DC converters, motor drivers, Solenoid drivers and other low-voltage power supply devices, as well as for high-current switching.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	150	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak ^{NOTE1}	10	A
P_C	Collector Power Dissipation @ $T_C=25^{\circ}\text{C}$	15	W
	Collector Power Dissipation @ $T_a=25^{\circ}\text{C}$ ^{NOTE2}	1.0	
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^{\circ}\text{C}$

NOTE1: $PW \leq 300\text{ms}$, Duty cycle $\leq 10\%$

NOTE2: Printing boarding mounted



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ELECTRICAL CHARACTERISTICS

T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE(sat)} -1 ^{NOTE}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 150mA			0.3	V
V _{CE(sat)} -2 ^{NOTE}	Collector-Emitter Saturation Voltage	I _C = 4A; I _B = 200mA			0.5	V
V _{BE(sat)} -1 ^{NOTE}	Base-Emitter Saturation Voltage	I _C = 3A; I _B = 150mA			1.2	V
V _{BE(sat)} -2 ^{NOTE}	Base-Emitter Saturation Voltage	I _C = 4A; I _B = 200mA			1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 100V; I _E = 0			10	μA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			10	μA
h _{FE-1} ^{NOTE}	DC Current Gain	I _C = 0.5A; V _{CE} = 2V	100			
h _{FE-2} ^{NOTE}	DC Current Gain	I _C = 1A; V _{CE} = 2V	100		400	
h _{FE-3} ^{NOTE}	DC Current Gain	I _C = 3A; V _{CE} = 2V	60			
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f= 1.0MHz		60		pF
f _T	Current-Gain—Bandwidth Product	I _C = 500mA; V _{CE} = 10V		150		MHz

NOTE: Pulse test PW≤350us, duty cycle ≤2%/pulse

◆ h_{FE-2} Classifications

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

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