

**isc Silicon NPN Power Transistor**
**2SC3450**
**DESCRIPTION**

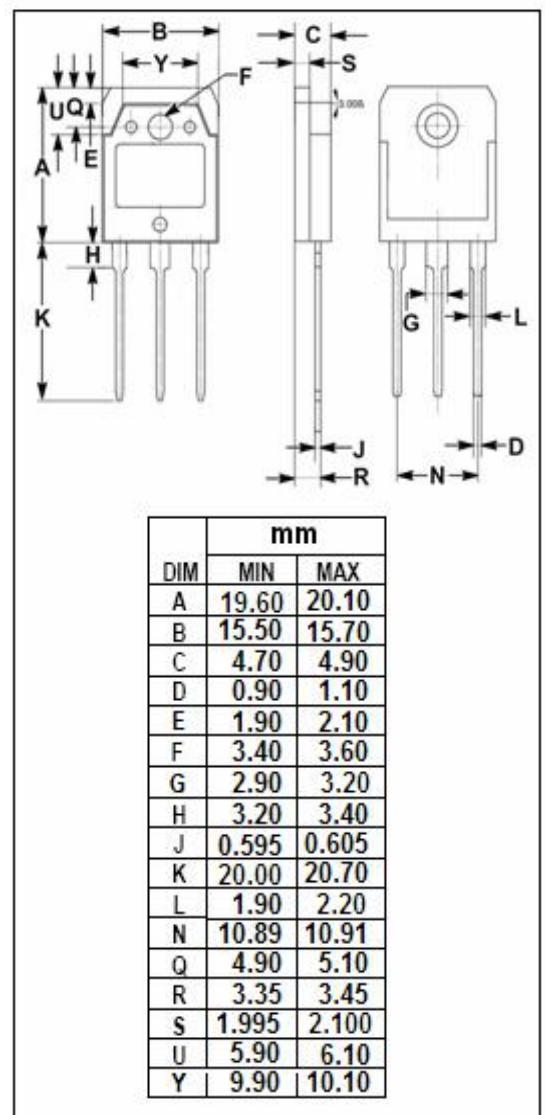
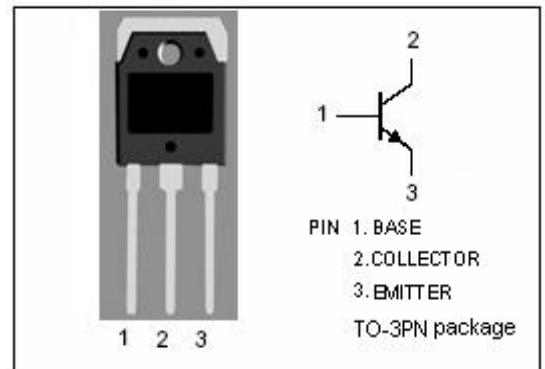
- High Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 500V(\text{Min})$
- High Switching Speed
- Wide Area of Safe Operation
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Designed for switching regulator and general purpose 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	500	V
$V_{EBO}$	Emitter-Base voltage	7	V
$I_C$	Collector Current-Continuous	10	A
$I_{CM}$	Collector Current-Peak	20	A
$I_B$	Base Current-Continuous	3	A
$P_C$	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	90	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<sub>c</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 1mA; I <sub>E</sub> = 0	800			V
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 5mA; R <sub>BE</sub> = ∞	500			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 1mA; I <sub>C</sub> = 0	7			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 0.8A			1.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 0.8A			1.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 500V; I <sub>E</sub> = 0			10	μA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			10	μA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 0.8A; V <sub>CE</sub> = 5V	15		50	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 4A; V <sub>CE</sub> = 5V	8			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 0.8A; V <sub>CE</sub> = 10V		18		MHz
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f <sub>test</sub> = 1.0MHz		120		pF

**Switching Times**

t <sub>on</sub>	Turn-on Time				0.5	μs
t <sub>stg</sub>	Storage Time	I <sub>C</sub> = 5A; I <sub>B1</sub> = 1A; I <sub>B2</sub> = -2A R <sub>L</sub> = 40 Ω; V <sub>CC</sub> = 200V			3.0	μs
t <sub>f</sub>	Fall Time				0.3	μs

**◆ h<sub>FE-1</sub> Classifications**

L	M	N
15-30	20-40	30-50

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