

**isc Silicon NPN Power Transistor**

**2SC2433**

**DESCRIPTION**

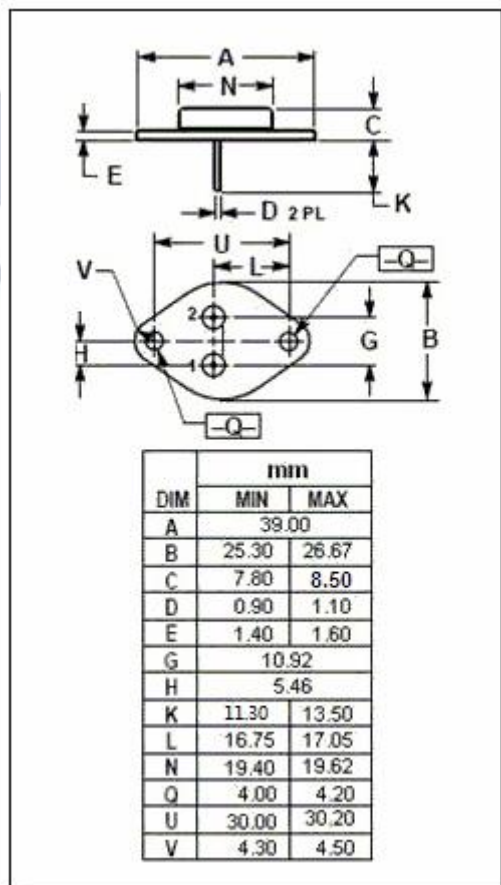
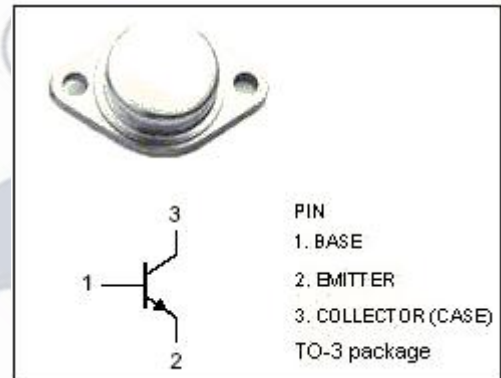
- High Collector-Emitter Breakdown Voltage-  
 $V_{(BR)CEO} = 120V(\text{Min})$
- High Current Capability
- Wide Area of Safe Operation
- Complement to Type 2SA1043

**APPLICATIONS**

- Power switching applications
- High frequency power amplifier
- Switching regulators
- DC-DC converters

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	120	V
$V_{CEO}$	Collector-Emitter Voltage	120	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	30	A
$I_B$	Base Current-Continuous	10	A
$P_C$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	150	W
$T_J$	Junction Temperature	175	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~175	$^\circ\text{C}$



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## ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}$ ; $R_{BE}=\infty$	120			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=50\ \mu\text{A}$ ; $I_E=0$	120			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}$ ; $I_C=0$	5			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=15\text{A}$ ; $I_B=1.5\text{A}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=15\text{A}$ ; $I_B=1.5\text{A}$			2.0	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=120\text{V}$ ; $I_E=0$			50	$\mu\text{A}$
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=120\text{V}$ ; $I_E=0$			1	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=4\text{V}$ ; $I_C=0$			50	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=3\text{A}$ ; $V_{CE}=5\text{V}$	35		200	
$h_{FE-2}$	DC Current Gain	$I_C=30\text{A}$ ; $V_{CE}=5\text{V}$	7			
$C_{OB}$	Output Capacitance	$I_E=0$ ; $V_{CB}=10\text{V}$ ; $f=1.0\text{MHz}$		1000		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C=2\text{A}$ ; $V_{CE}=10\text{V}$		60		MHz

## Switching Times

$t_r$	Rise Time			0.10		$\mu\text{s}$
$t_{stg}$	Storage Time	$I_C=15\text{A}$ ; $I_{B1}=-I_{B2}=1.5\text{A}$ ; $R_L=2\ \Omega$		0.10		$\mu\text{s}$
$t_f$	Fall Time			0.10		$\mu\text{s}$