

SPTECH Silicon NPN Power Transistor

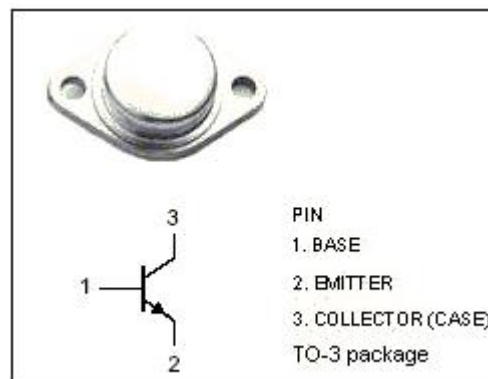
2SC2433

DESCRIPTION

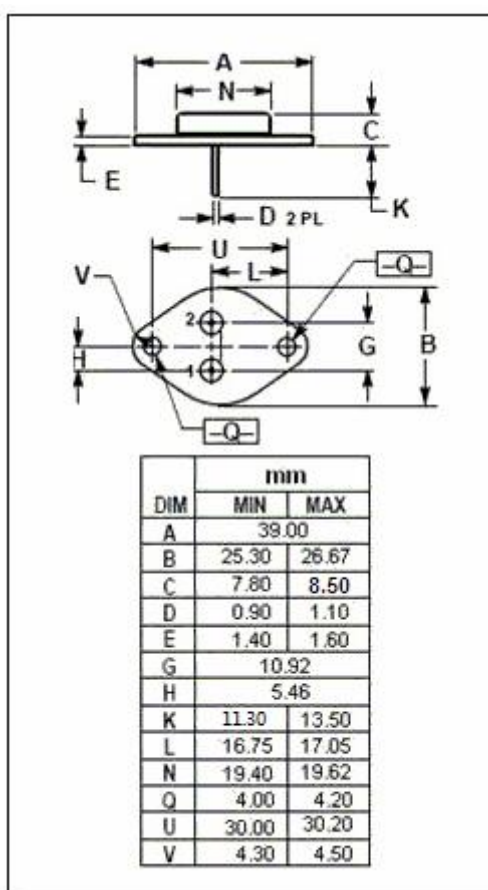
- High Collector-Emitter Breakdown Voltage-
 $V_{(BR)CEO} = 120V(\text{Min})$
- High Current Capability
- Wide Area of Safe Operation
- Complement to Type 2SA1043

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