

**SPTECH Silicon NPN Power Transistor**

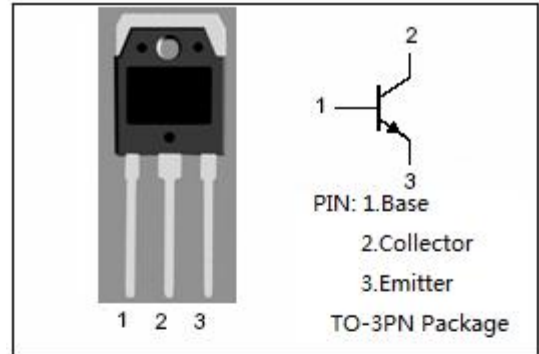
**2SC3320**

**DESCRIPTION**

- High Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 400V(\text{Min})$
- High Switching Speed
- High Reliability

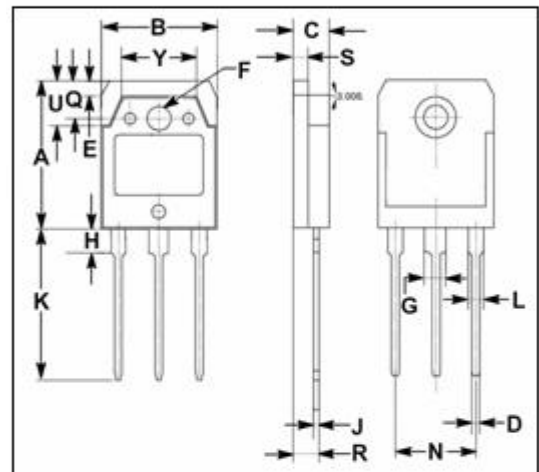
**APPLICATIONS**

- Switching regulators
- Ultrasonic generators
- High frequency inverters
- General purpose power amplifiers



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	500	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{CEO(SUS)}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	15	A
$I_B$	Base Current-Continuous	5	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	80	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$



DIM	mm	
	MIN	MAX
A	19.60	20.30
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.20
H	3.20	3.40
J	0.595	0.605
K	19.80	20.70
L	1.90	2.20
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.100
U	5.90	6.20
Y	9.90	10.10

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.56	$^\circ\text{C/W}$

**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	$I_C= 10\text{mA}$ ; $I_B= 0$	400			V
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C= 50\text{mA}$ ; $I_B= 0$	400			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C= 1\text{mA}$ ; $I_E= 0$	500			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E= 1\text{mA}$ ; $I_C= 0$	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C= 6\text{A}$ ; $I_B= 1.2\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C= 6\text{A}$ ; $I_B= 1.2\text{A}$			1.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}= 500\text{V}$ ; $I_E= 0$			1.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}= 7\text{V}$ ; $I_C= 0$			1.0	mA
$h_{FE}$	DC Current Gain	$I_C= 6\text{A}$ ; $V_{CE}= 5\text{V}$	10			

Switching times

$t_{on}$	Turn-on Time	$I_C= 7.5\text{A}$ , $I_{B1}= 1.5\text{A}$ ; $I_{B2}= -3\text{A}$ $R_L= 20\ \Omega$ ; $P_W=20\ \mu\text{s}$ Duty $\leq 2\%$			0.5	$\mu\text{s}$
$t_{stg}$	Storage Time				1.5	$\mu\text{s}$
$t_f$	Fall Time				0.15	$\mu\text{s}$