

**SPTECH Silicon NPN Power Transistor**

**2SC3866**

**DESCRIPTION**

- High Breakdown Voltage  
:  $V_{(BR)CBO} = 900V(\text{Min})$
- High Switching Speed
- High Reliability

**APPLICATIONS**

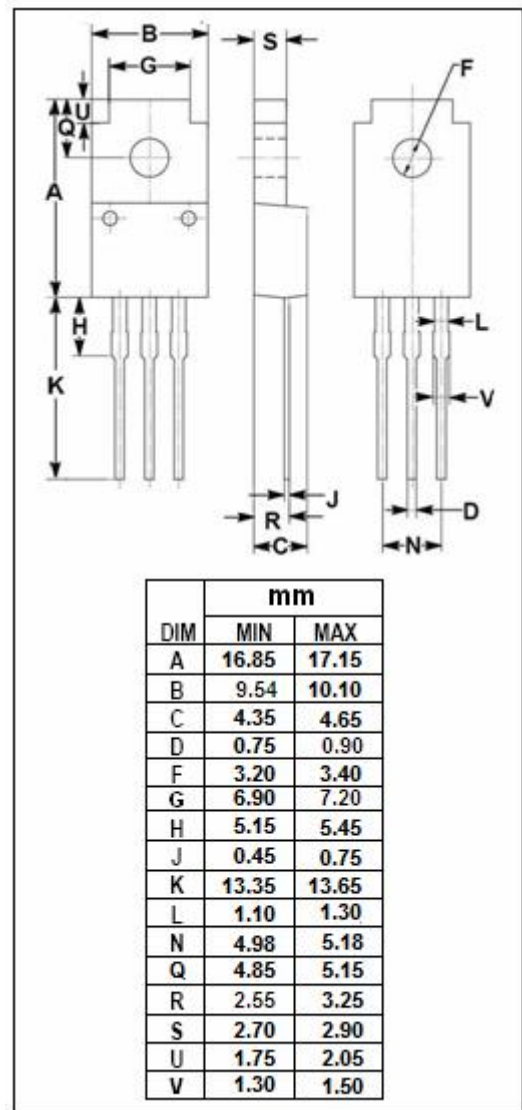
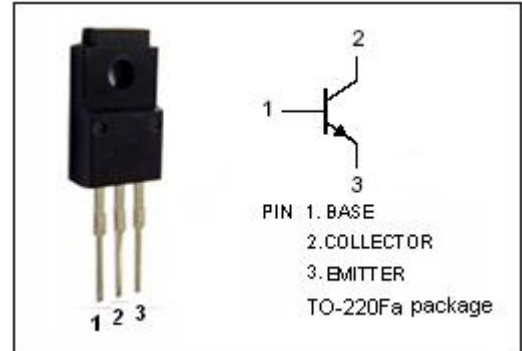
- Switching regulators
- Ultrasonic generators
- High frequency inverters
- General purpose power amplifiers

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	900	V
$V_{CEO}$	Collector-Emitter Voltage	800	V
$V_{EBO}$	Emitter-Base Voltage	10	V
$I_C$	Collector Current-Continuous	3	A
$I_B$	Base Current-Continuous	1	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	40	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	3.0	$^\circ\text{C}/\text{W}$



**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	$I_C= 10\text{mA}; I_B= 0$	800			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C= 1\text{mA}; I_E= 0$	900			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E= 1\text{mA}; I_C= 0$	10			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C= 1\text{A}; I_B= 0.2\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C= 1\text{A}; I_B= 0.2\text{A}$			1.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}= 900\text{V}; I_E= 0$			1.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}= 10\text{V}; I_C= 0$			1.0	mA
$h_{FE}$	DC Current Gain	$I_C= 1\text{A}; V_{CE}= 5\text{V}$	10			

Switching times

$t_{on}$	Turn-on Time	$I_C= 2\text{A}, I_{B1}= 0.4\text{A}; I_{B2}= -0.8\text{A}$ $R_L=150\ \Omega;$ $P_W=20\ \mu\text{s}; \text{Duty} \leq 2\%$			1.0	$\mu\text{s}$
$t_{stg}$	Storage Time				4.0	$\mu\text{s}$
$t_f$	Fall Time				0.8	$\mu\text{s}$