

**isc Silicon NPN Power Transistor**
**2SC3866**
**DESCRIPTION**

- High Breakdown Voltage  
:  $V_{(BR)CBO} = 900V(\text{Min})$
- High Switching Speed
- High Reliability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

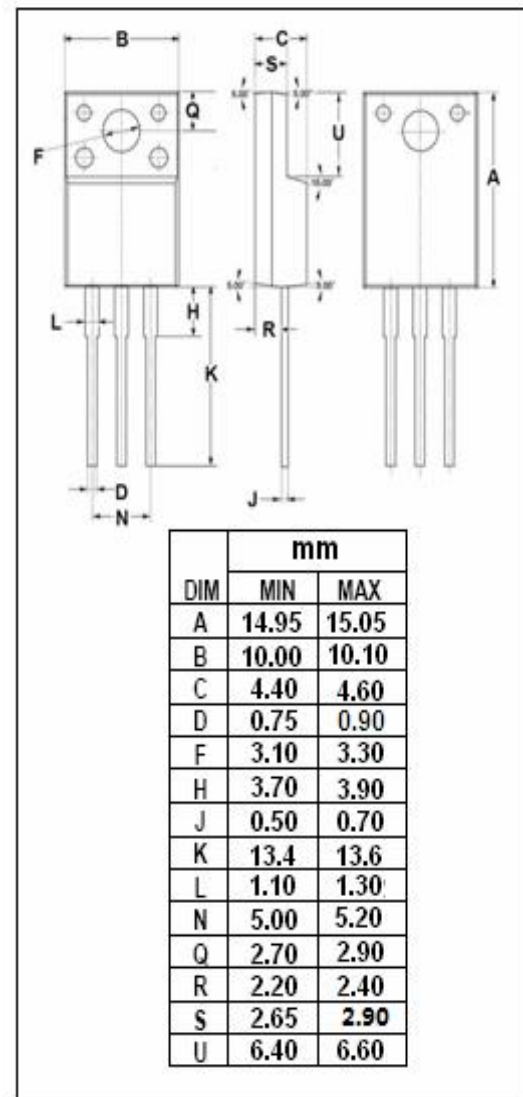
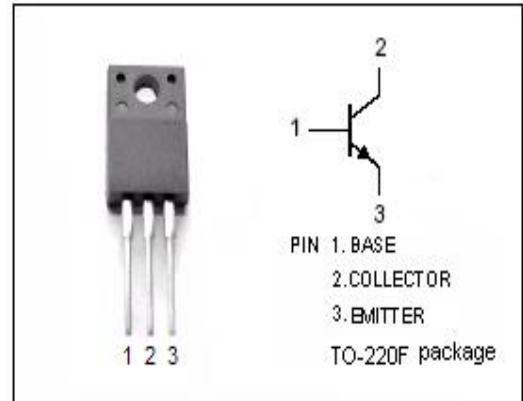
- Switching regulators
- Ultrasonic generators
- High frequency inverters
- General purpose power amplifiers

**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	$^\circ\text{C/W}$



## isc Silicon NPN Power Transistor

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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	$I_C=10\text{mA}; I_B=0$	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	$\mu\text{s}$

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