

**isc Silicon NPN Power Transistor**

**2SC2507**

**DESCRIPTION**

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 400V(\text{Min})$
- Fast Switching Speed
- Collector-Emitter Saturation Voltage-  
:  $V_{CE(sat)} = 0.7V(\text{Max.}) @ I_C = 10A$

**APPLICATIONS**

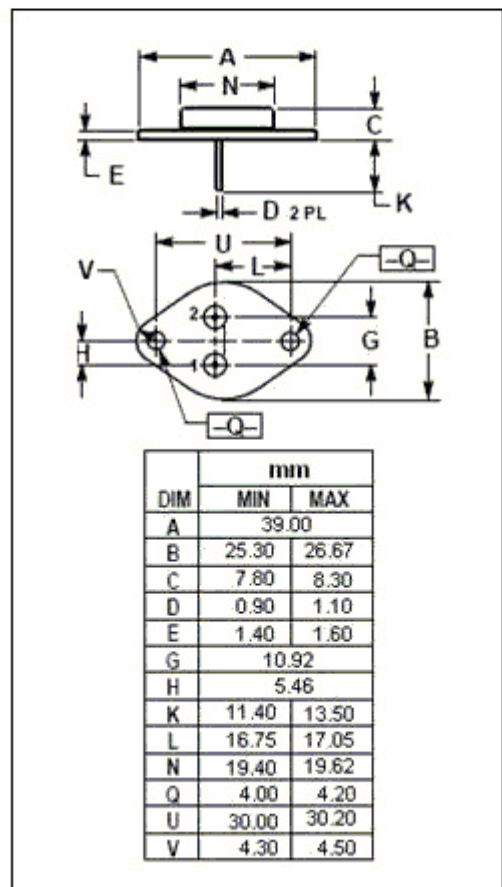
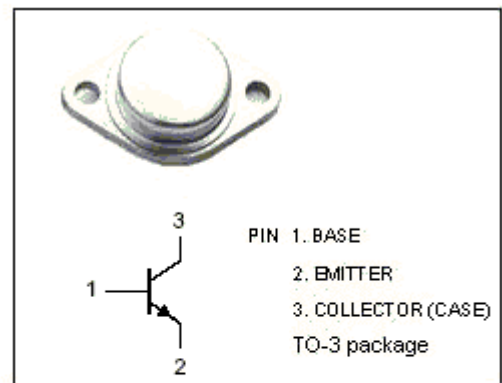
- Designed for use in high-voltage, high-speed, power switching in inductive circuit, they are particularly suited for 115 and 220V switchmode applications such as switching regulator's, inverters.

**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
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	20	A
$I_{CM}$	Collector Current-Peak	40	A
$I_B$	Base Current-Continuous	7	A
$I_{BM}$	Base Current-Peak	14	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	200	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	0.625	$^\circ\text{C/W}$



**isc Silicon NPN Power Transistor****2SC2507****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=0.2\text{A}; I_B=0$	400			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=1\text{A}$			0.7	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=1\text{A}$			1.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=500\text{V}; I_E=0$			100	$\mu\text{A}$
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=320\text{V}; I_B=0$			100	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$			1.0	mA
$h_{FE-1}$	DC Current Gain	$I_C=10\text{A}; V_{CE}=2\text{V}$	15			
$h_{FE-2}$	DC Current Gain	$I_C=20\text{A}; V_{CE}=2\text{V}$	8			
$f_T$	Current-Gain—Bandwidth Product	$I_C=1\text{A}; V_{CE}=10\text{V}$		20		MHz

## Switching times

$t_{on}$	Turn-on Time	$I_C=10\text{A}; I_{B1}=-I_{B2}=2\text{A}$ $R_L=3\Omega; V_{BB2}=4\text{V}$			1.0	$\mu\text{s}$
$t_{stg}$	Storage Time				3.0	$\mu\text{s}$
$t_f$	Fall Time				0.7	$\mu\text{s}$