

**isc Silicon NPN Power Transistor**

**2N6512**

**DESCRIPTION**

- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = 1.5V(\text{Max.})@I_C = 4A$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 300V(\text{Min.})$
- Fast Switching Speed

**APPLICATIONS**

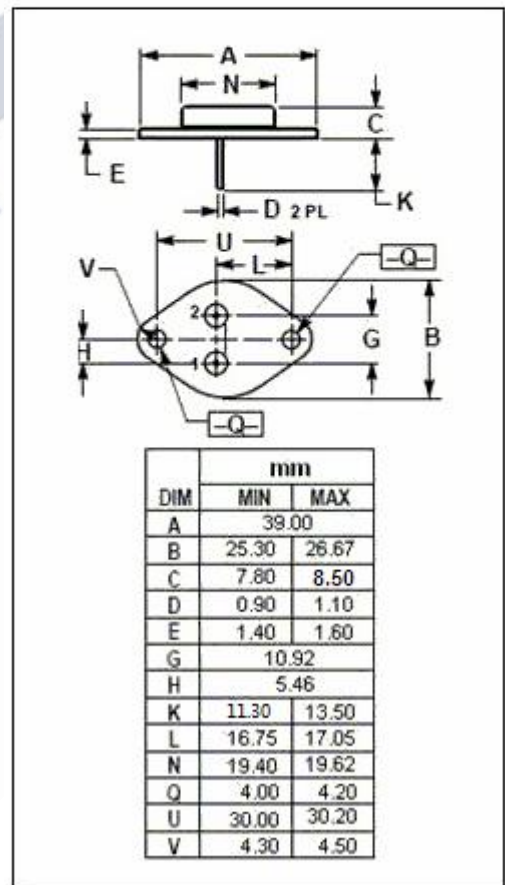
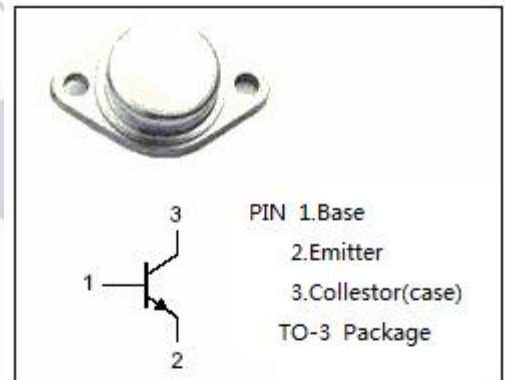
- Designed for use in off-line power supplies, high voltage inverters, switching regulators, ignition systems and deflection circuits.

**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CEO}$	Collector-Emitter Voltage	300	V
$V_{CER}$	Collector-Emitter Voltage $R_{BE} = 50 \Omega$	350	V
$V_{CBO}$	Collector-Base Voltage	350	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	7	A
$I_{CM}$	Collector Current-Peak	10	A
$I_B$	Base Current-Continuous	3	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ C$	120	W
$T_j$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature Range	-65~150	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.46	°C/W



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## 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	$I_C=50\text{mA}; I_B=0$	300			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=0.8\text{A}$			1.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=7\text{A}; I_B=3\text{A}$			2.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=0.8\text{A}$			1.7	V
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=6\text{V}; I_C=0$			3.0	mA
$h_{FE}$	DC Current Gain	$I_C=4\text{A}; V_{CE}=3\text{V}$	10		50	
$I_{s/b}$	Second Breakdown Collector Current with Base Forward Biased	$V_{CE}=35\text{V}, t=1.0\text{s}, \text{Nonrepetitive}$	3.16			A
		$V_{CE}=200\text{V}, t=1.0\text{s}, \text{Nonrepetitive}$	0.1			A
$C_{OB}$	Collector Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f=1\text{MHz}$	100			pF

## Switching Times

$t_d$	Delay Time	$V_{CC}=200\text{V};$ $I_C=4\text{A}; I_{B1}=-I_{B2}=0.8\text{A}$			0.2	$\mu\text{s}$
$t_r$	Rise Time				1.5	$\mu\text{s}$
$t_s$	Storage Time				5.0	$\mu\text{s}$
$t_f$	Fall Time				1.5	$\mu\text{s}$