

**isc Silicon NPN Power Transistor**
**2SC3993**
**DESCRIPTION**

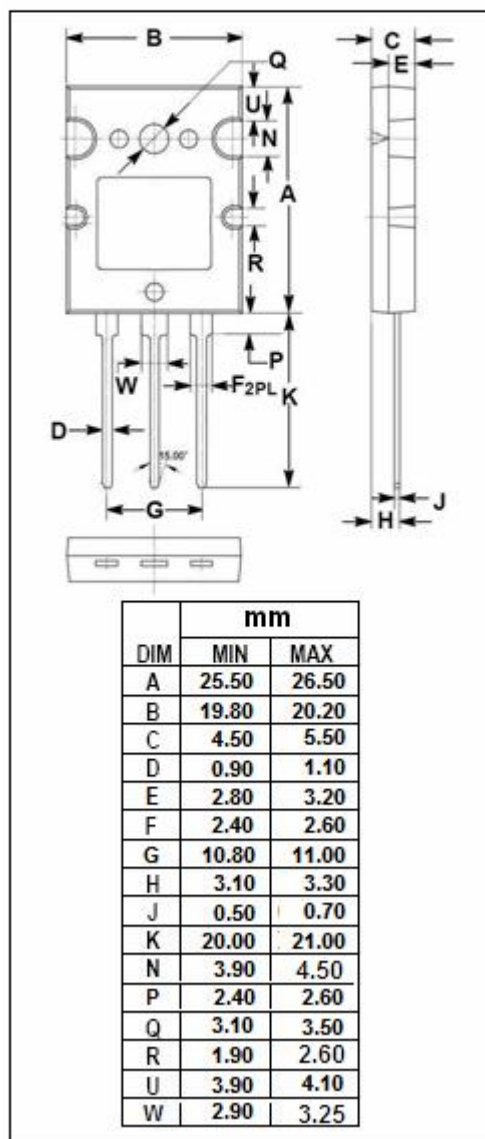
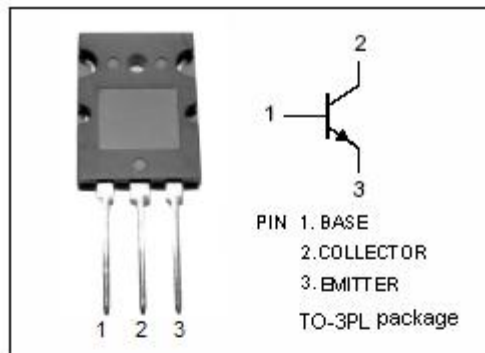
- High Switching Speed
- High Breakdown Voltage-  
:  $V_{(BR)CBO} = 1100V(\text{Min})$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- 800V/16A switching regulator applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	1100	V
$V_{CEO}$	Collector-Emitter Voltage	800	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	16	A
$I_{CM}$	Collector Current-Pulse	40	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	250	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



## isc Silicon NPN Power Transistor

## 2SC3993

## ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=30\text{mA}; I_B=0$	800			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=1.2\text{A}$			2.0	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	$V_{CB}=800\text{V}; I_E=0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=1.2\text{A}; V_{CE}=5\text{V}$	10		40	
$h_{FE-2}$	DC Current Gain	$I_C=6\text{A}; V_{CE}=5\text{V}$	8			
$t_{stg}$	Storage Time	$I_C=10\text{A}; I_{B1}=2\text{A}; I_{B2}=-4\text{A}$			3.0	$\mu\text{s}$
$t_f$	Fall Time				0.3	$\mu\text{s}$

◆  $h_{FE-1}$  Classifications

K	L	M
10-20	15-30	20-40

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