

**isc Silicon NPN Power Transistor**
**2SC4581**
**DESCRIPTION**

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 450V(\text{Min})$
- Fast Switching speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

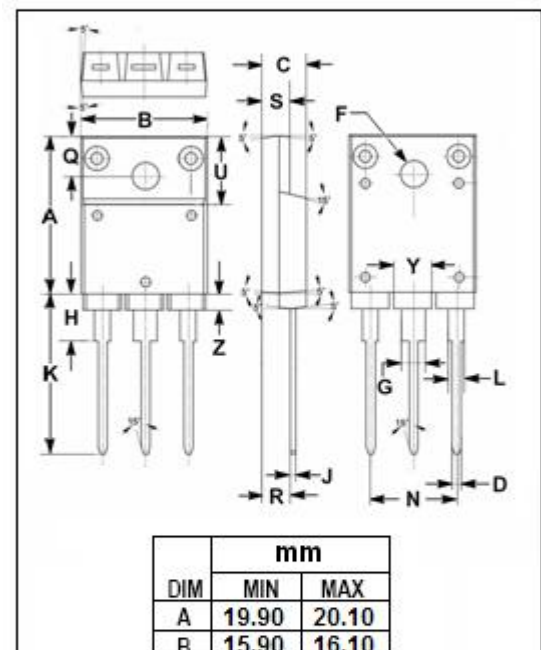
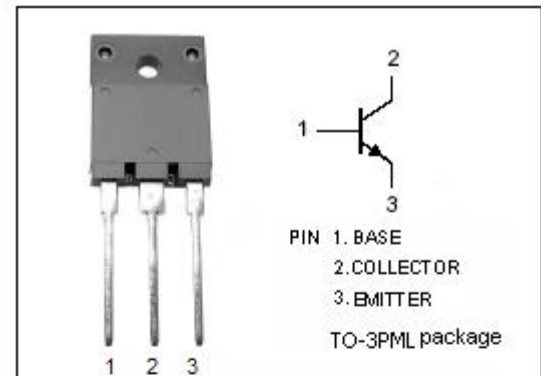
- Designed for power switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	600	V
$V_{CEO}$	Collector-Emitter Voltage	450	V
$V_{CEX}$	Collector-Emitter Voltage $V_{EB}=5V$	600	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	10	A
$I_{CM}$	Collector Current-Peak	20	A
$I_B$	Base Current-Continuous	4	A
$I_{BM}$	Base Current-Peak	8	A
$P_T$	Total Power Dissipation @ $T_C=25^\circ\text{C}$	65	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	1.92	$^\circ\text{C/W}$



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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=0.2\text{A}; I_B=0$	450			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=1\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=1\text{A}$			1.5	V
$I_{CBO}$	Collector Cutoff Current	At rated Voltage			100	$\mu\text{A}$
$I_{CEO}$	Collector Cutoff Current	At rated Voltage			100	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	At rated Voltage			100	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=5\text{A}; V_{CE}=5\text{V}$	10			
$h_{FE-2}$	DC Current Gain	$I_C=1\text{mA}; V_{CE}=5\text{V}$	5			
$f_T$	Current-Gain—Bandwidth Product	$I_C=1\text{A}; V_{CE}=10\text{V}$		20		MHz

## Switching times

$t_{on}$	Turn-on Time	$I_C=5\text{A}; I_{B1}=1\text{A}; I_{B2}=-2\text{A}; R_L=30\Omega; V_{BB2}=4\text{V}$			0.5	$\mu\text{s}$
$t_{stg}$	Storage Time				2.0	$\mu\text{s}$
$t_f$	Fall Time				0.2	$\mu\text{s}$

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