

isc Silicon NPN Power Transistor

2SC4596

DESCRIPTION

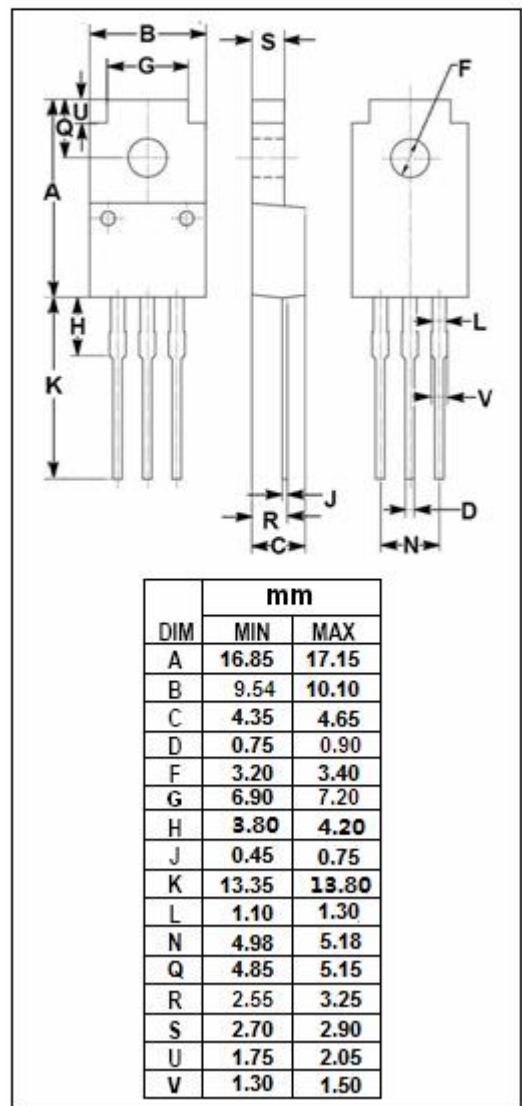
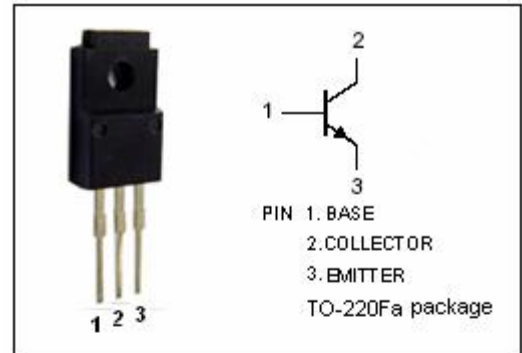
- Low Collector Saturation Voltage
: $V_{CE(sat)} = 0.3V(\text{Max}) @ I_C = 3A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 60V (\text{Min})$
- Complement to Type 2SA1757
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for high speed and power switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	10	A
P_C	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	25	W
	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	2	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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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	$I_C = 3\text{A}$; $I_B = 0.3\text{A}$, $L = 1\text{mH}$	60			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 50\text{ }\mu\text{A}$; $I_E = 0$	100			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 50\text{ }\mu\text{A}$; $I_C = 0$	5			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = 3\text{A}$; $I_B = 0.15\text{A}$			0.3	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = 4\text{A}$; $I_B = 0.2\text{A}$			0.5	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C = 3\text{A}$; $I_B = 0.15\text{A}$			1.2	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C = 4\text{A}$; $I_B = 0.2\text{A}$			1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 100\text{V}$; $I_E = 0$			10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5\text{V}$; $I_C = 0$			10	μA
h_{FE}	DC Current Gain	$I_C = 1\text{A}$; $V_{CE} = 2\text{V}$	100		320	
f_T	Current-Gain—Bandwidth Product	$I_C = 0.5\text{A}$; $V_{CE} = 10\text{V}$		120		MHz
C_{OB}	Output Capacitance	$I_E = 0$; $V_{CB} = 10\text{V}$; $f_{test} = 1.0\text{MHz}$		80		pF

Switching times

t_{on}	Turn-on Time	$I_C = 3\text{A}$; $I_{B1} = -I_{B2} = 0.15\text{A}$ $R_L = 10\text{ }\Omega$; $V_{CC} \approx 30\text{V}$			0.3	μs
t_{stg}	Storage Time				1.5	μs
t_f	Fall Time				0.3	μs

◆ h_{FE} classifications

E	F
100-200	160-320

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