

**Silicon NPN Power Transistor**

**2SC4596**

**DESCRIPTION**

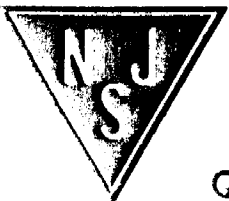
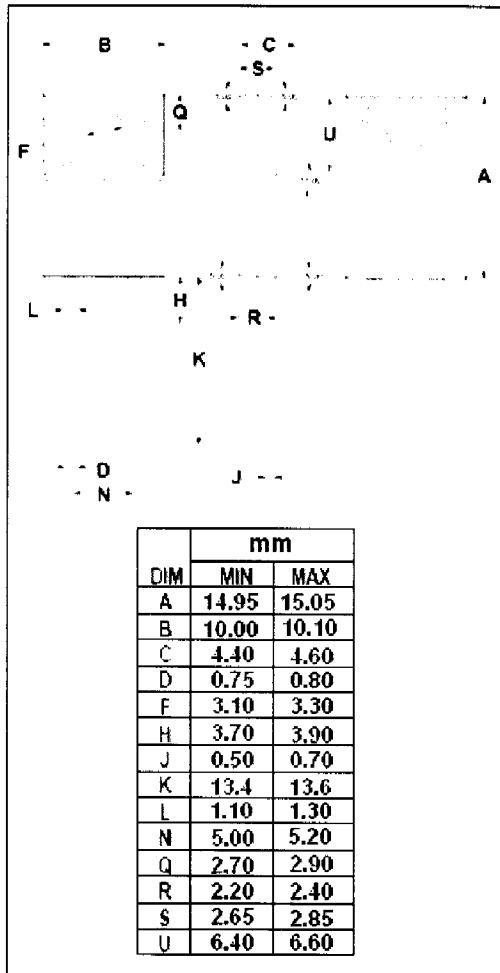
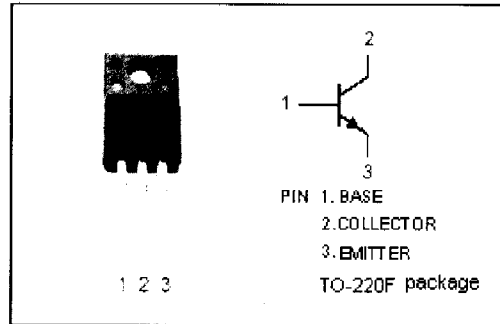
- Low Collector Saturation Voltage  
 :  $V_{CE(sat)} = 0.3V(\text{Max}) @ I_C = 3A$
- Collector-Emitter Sustaining Voltage-  
 :  $V_{CEO(SUS)} = 60V (\text{Min})$
- Complement to Type 2SA1757

**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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# 2SC4596

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

### Switching times

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

### ◆ $h_{FE}$ classifications

E	F
100-200	160-320