

**Silicon PNP Power Transistor**

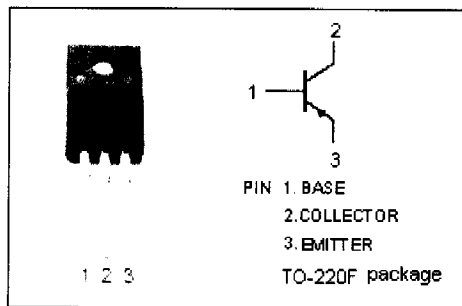
**2SA1600**

**DESCRIPTION**

- Collector-Emitter Sustaining Voltage-  
:  $V_{CE(SUS)} = -40(V)(Min.)$
- Low Collector Saturation Voltage  
:  $V_{CE(sat)} = -0.3(V)(Max.) @ I_C = -6A$
- Large Current Capability- $I_C = -12A$

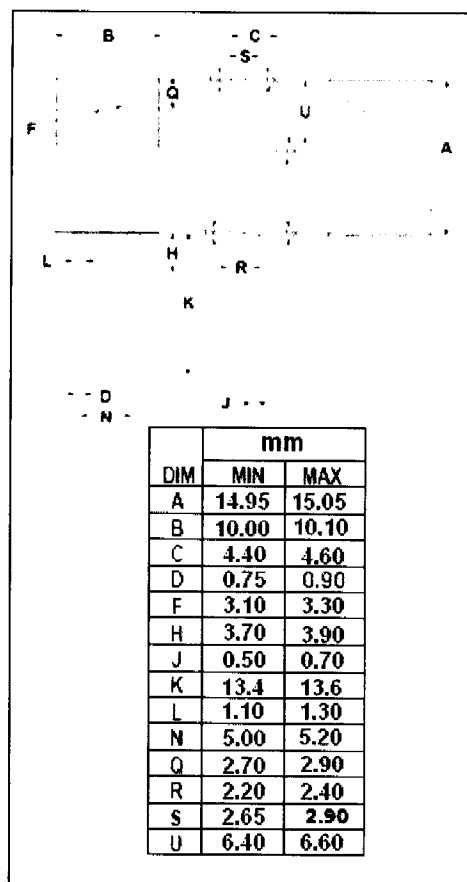
**APPLICATIONS**

- Designed for mid-switching applications, and is ideal for use as a ramp driver.



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

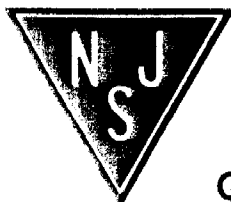
SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-60	V
$V_{CEO}$	Collector-Emitter Voltage	-40	V
$V_{EBO}$	Emitter-Base Voltage	-7	V
$I_C$	Collector Current-Continuous	-12	A
$I_{CM}$	Collector Current-Peak	-24	A
$I_B$	Base Current-Continuous	-2	A
$I_{BM}$	Base Current-Peak	-3	A
$P_C$	Total Power Dissipation @ $T_C=25^{\circ}C$	30	W
$T_J$	Junction Temperature	150	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-55~150	$^{\circ}C$



**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	4.16	$^{\circ}C/W$

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# 2SA1600

## 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	$I_C = -10\text{mA}; I_B = 0$	-40			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -6\text{A}; I_B = -0.3\text{A}$			-0.3	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -6\text{A}; I_B = -0.3\text{A}$			-1.2	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -60\text{V}; I_E = 0$			-100	$\mu\text{A}$
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = -40\text{V}; I_B = 0$			-100	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -7\text{V}; I_C = 0$			-100	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C = -6\text{A}; V_{CE} = -2\text{V}$	70			
$f_T$	Current-Gain—Bandwidth Product	$I_C = -1.2\text{A}; V_{CE} = -10\text{V}$		50		MHz

## Switching Times

$t_{on}$	Turn-on Time	$I_C = -6\text{A}, I_{B1} = -I_{B2} = -0.6\text{A}, R_1 = 5\Omega, V_{BB2} = -4\text{V};$			0.3	$\mu\text{s}$
$t_{stg}$	Storage Time				1.5	$\mu\text{s}$
$t_f$	Fall Time				0.5	$\mu\text{s}$