

**Silicon PNP Power Transistor**

**2SA1878**

**DESCRIPTION**

- Collector-Emitter Sustaining Voltage-  
:  $V_{CE0(SUS)} = -80(V)(Min.)$
- Low Collector Saturation Voltage  
:  $V_{CE(sat)} = -0.3(V)(Max.) @ I_C = -2.5A$
- Large Current Capability- $I_C = -5A$

**APPLICATIONS**

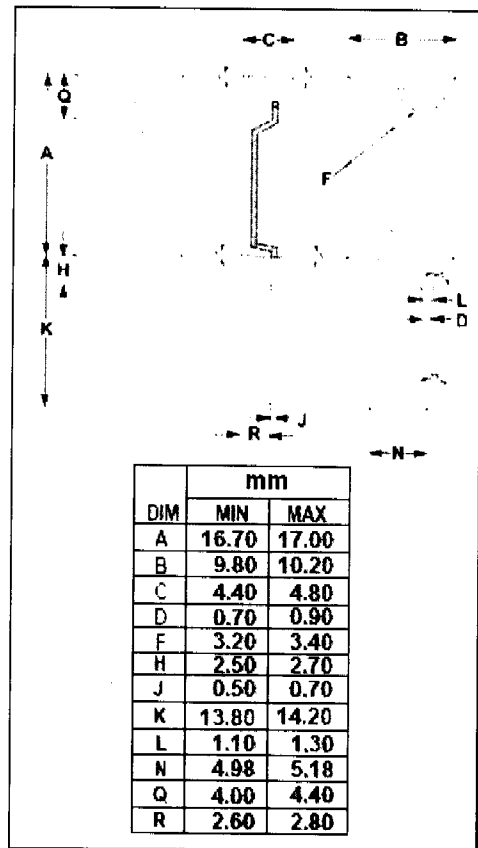
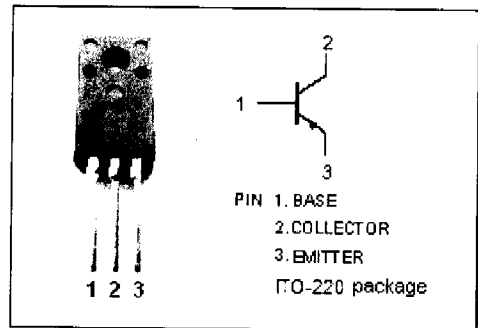
- Designed for use as a driver in DC/DC converters and actuators.

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

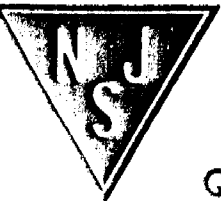
SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-80	V
$V_{CEO}$	Collector-Emitter Voltage	-80	V
$V_{EBO}$	Emitter-Base Voltage	-7	V
$I_C$	Collector Current-Continuous	-5	A
$I_{CM}$	Collector Current-Peak	-10	A
$I_B$	Base Current-Continuous	-1.5	A
$I_{BM}$	Base Current-Peak	-2	A
$P_C$	Total Power Dissipation @ $T_C=25^{\circ}C$	25	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	5	$^{\circ}C/W$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = -0.05A; I_B = 0$	-80			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -2.5A; I_B = -0.25A$			-0.3	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -2.5A; I_B = -0.25A$			-1.2	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -80V; I_E = 0$			-100	$\mu A$
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = -80V; I_B = 0$			-100	$\mu A$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -7V; I_C = 0$			-100	$\mu A$
$h_{FE}$	DC Current Gain	$I_C = -2.5A; V_{CE} = -2V$	70			
$f_T$	Current-Gain—Bandwidth Product	$I_C = -0.5A; V_{CE} = -10V$		50		MHz

### Switching Times

$t_{on}$	Turn-on Time	$I_C = -2.5A, I_{B1} = -I_{B2} = -0.25A,$ $R_L = 12\Omega, V_{BB2} = -4V;$			0.3	$\mu s$
$t_{stg}$	Storage Time				1.5	$\mu s$
$t_f$	Fall Time				0.2	$\mu s$