

**Silicon PNP Power Transistor**

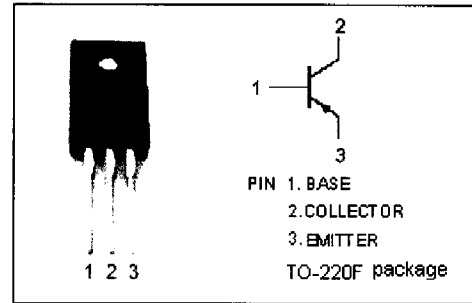
**2SA2140**

**DESCRIPTION**

- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = -180V(\text{Min})$
- Good Linearity of  $h_{FE}$

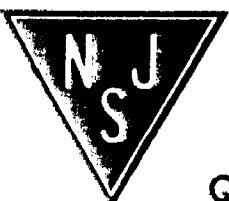
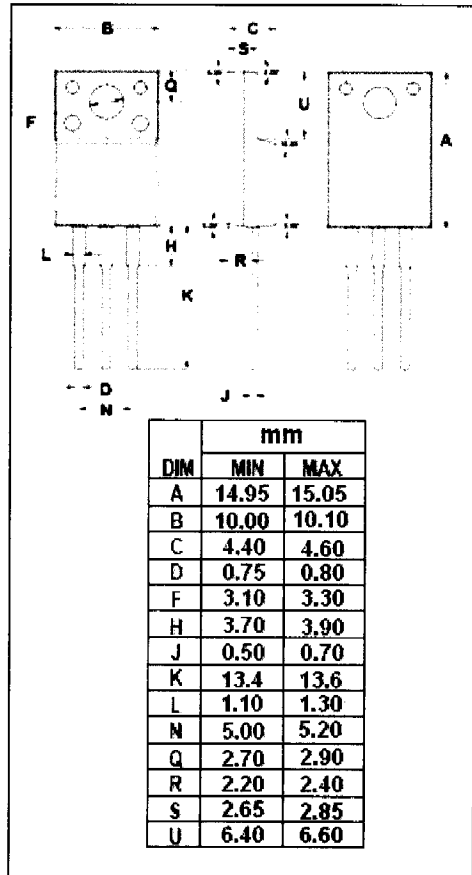
**APPLICATIONS**

- Designed for power amplification and for TV VM circuit.



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-180	V
$V_{CEO}$	Collector-Emitter Voltage	-180	V
$V_{EBO}$	Emitter-Base Voltage	-6	V
$I_C$	Collector Current-Continuous	-1.5	A
$I_{CP}$	Collector Current-Peak	-3	A
$P_C$	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	20	
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~150	$^\circ\text{C}$



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## Silicon PNP Power Transistor

## 2SA2140

### ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -10\text{mA}; I_B = 0$	-180			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -1\text{A}; I_B = -0.1\text{A}$			-0.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -180\text{V}; I_E = 0$			-100	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -6\text{V}; I_C = 0$			-100	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C = -1\text{A}; V_{CE} = -5\text{V}$	60		240	
$C_{OB}$	Collector Output Capacitance	$I_E = 0; V_{CB} = -10\text{V}; f = 1\text{MHz}$		30		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C = -0.2\text{A}; V_{CE} = -10\text{V}; f = 10\text{MHz}$		100		MHz

### Switching Times

$t_{on}$	Turn-on Time	$I_C = -0.4\text{A}, V_{CC} = 100\text{V}$ $I_{B1} = -I_{B2} = -0.04\text{A}$		0.1		$\mu\text{s}$
$t_{stg}$	Storage Time			1.0		$\mu\text{s}$
$t_f$	Fall Time			0.1		$\mu\text{s}$

### ◆ $h_{FE}$ Classifications

Q	P
60-140	120-240