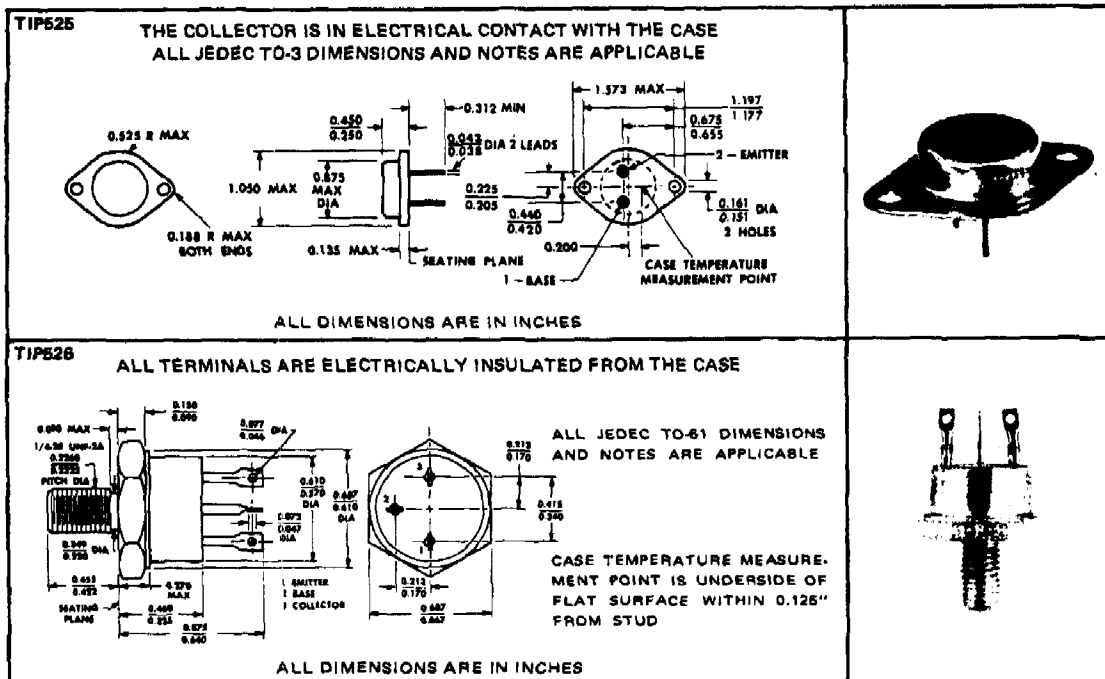


**TYPES TIP525, TIP526  
N-P-N SILICON POWER TRANSISTORS**

**FOR POWER-AMPLIFIER AND HIGH-SPEED-SWITCHING APPLICATIONS**

- 200 V Min  $V(BR)_{CEO}$
- 5-A Rated Continuous Collector Current
- 60 Watts at 100°C Case Temperature
- Min  $f_T$  of 40 MHz at 5 V, 0.5 A

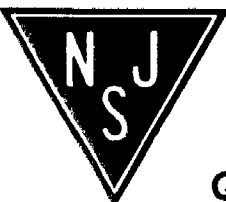
mechanical data



absolute maximum ratings at 25°C case temperature (unless otherwise noted)

	TIP525	TIP526
Collector-Base Voltage	← 250 V →	
Collector-Emitter Voltage (See Note 1)	← 200 V →	
Emitter-Base Voltage	← 6 V →	
Continuous Collector Current	← 5 A →	
Peak Collector Current (See Note 2)	← 10 A →	
Continuous Base Current	← 2 A →	
Continuous Device Dissipation at (or below) 100°C Case Temperature (See Note 3)	← 60 W →	
Continuous Device Dissipation at (or below) 25°C Free-Air Temperature (See Note 4)	4 W	3.5 W
Operating Collector Junction Temperature Range	-65°C to 200°C	
Storage Temperature Range	-65°C to 200°C	
Terminal Temperature 1/16 Inch from Case for 10 Seconds	← 300°C →	

- NOTES: 1. This value applies when the base-emitter diode is open-circuited.  
2. This value applies for  $t_w < 0.3$  ms, duty cycle  $< 10\%$ .  
3. Derate linearly to 200°C case temperature at the rate of 0.6 W/°C.  
4. Derate linearly to 200°C free-air temperature at the rate of 22.8 mW/°C for TIP525 and 20 mW/°C for TIP526.



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

## TYPES TIP525, TIP526 N-P-N SILICON POWER TRANSISTORS

electrical characteristics at 25°C case temperature (unless otherwise noted)

PARAMETER	TEST CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$ Collector-Emitter Breakdown Voltage	$I_C = 30 \text{ mA}$ , $I_B = 0$ , See Note 5	200		V
$I_{CEO}$ Collector Cutoff Current	$V_{CE} = 100 \text{ V}$ , $I_B = 0$		500	$\mu\text{A}$
$I_{CES}$ Collector Cutoff Current	$V_{CE} = 250 \text{ V}$ , $V_{BE} = 0$		1	mA
	$V_{CE} = 125 \text{ V}$ , $V_{BE} = 0$ , $T_C = 150^\circ\text{C}$		2	
$I_{EBO}$ Emitter Cutoff Current	$V_{EB} = 5 \text{ V}$ , $I_C = 0$		100	$\mu\text{A}$
	$V_{EB} = 6 \text{ V}$ , $I_C = 0$		1	mA
$h_{FE}$ Static Forward Current Transfer Ratio	$V_{CE} = 4 \text{ V}$ , $I_C = 2.5 \text{ A}$ , See Notes 5 and 6	30	150	
	$V_{CE} = 4 \text{ V}$ , $I_C = 5 \text{ A}$ , See Notes 5 and 6	20		
$V_{BE}$ Base-Emitter Voltage	$V_{CE} = 4 \text{ V}$ , $I_C = 5 \text{ A}$ , See Notes 5 and 6		1.5	V
$V_{CE(sat)}$ Collector-Emitter Saturation Voltage	$I_B = 0.25 \text{ A}$ , $I_C = 2.5 \text{ A}$ , See Notes 5 and 6		1.2	V
	$I_B = 0.5 \text{ A}$ , $I_C = 5 \text{ A}$ , See Notes 5 and 6		2	
$h_{fe}$ Small-Signal Common-Emitter Forward Current Transfer Ratio	$V_{CE} = 5 \text{ V}$ , $I_C = 0.5 \text{ A}$ , $f = 1 \text{ kHz}$	30		
$ h_{fe} $ Small-Signal Common-Emitter Forward Current Transfer Ratio	$V_{CE} = 5 \text{ V}$ , $I_C = 0.5 \text{ A}$ , $f = 5 \text{ MHz}$	8		

- NOTES: 5. These parameters must be measured using pulse techniques.  $t_w = 300 \mu\text{s}$ , duty cycle  $\leq 2\%$ .  
6. These parameters are measured with voltage-sensing contacts separate from the current carrying contacts and located within 0.125 inch from the device body.

### thermal characteristics

PARAMETER	TIP525	TIP526	UNIT
	MAX	MAX	
$R_{\theta JC}$ Junction-to-Case Thermal Resistance	1.67	1.67	$^\circ\text{C/W}$
$R_{\theta JA}$ Junction-to-Free-Air Thermal Resistance	43.8	50	