



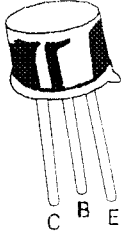
# SOLID STATE INC.

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## SILICON POWER SWITCHING TRANSISTORS

2N5320, 2N5321 NPN  
2N5322, 2N5323 PNP



TO-39  
Metal Can Package

### Medium Power Amplifier and Switching Applications

#### ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	2N5320	2N5321	2N5322	2N5323	UNITS
Collector Emitter Voltage	$V_{CEO}$	75	50	75	50	V
Collector Base Voltage	$V_{CBO}$	100	75	100	75	V
Emitter Base Voltage	$V_{EBO}$	7	5	7	5	V
Collector Current - Continuous	$I_C$	2.0				A
Base Current	$I_B$	1.0				A
Power Dissipation@ $T_a=25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	$P_D$	1 5.71				W mW/ $^\circ\text{C}$
Power Dissipation@ $T_c=25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	$P_D$	10 57.14				W mW/ $^\circ\text{C}$
Operating And Storage Junction Temperature Range	$T_j, T_{slg}$	- 65 to +200				$^\circ\text{C}$

#### THERMAL CHARACTERISTICS

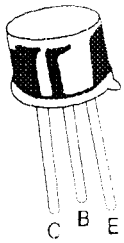
Junction to Ambient in free air	$R_{th(j-a)}$	175	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	17.5	$^\circ\text{C/W}$

#### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Collector Emitter Voltage	$V_{CEO}$	$I_C=100\text{mA}, I_B=0$ 2N5320/5322 2N5321/5323	75 50		V V
Collector Cut Off Current	$I_{CEX}$	$V_{CE}=70\text{V}, V_{BE}=1.5\text{V}, T_c=150^\circ\text{C}$ 2N5320/5322		5	mA
		$V_{CE}=45\text{V}, V_{BE}=1.5\text{V}, T_c=150^\circ\text{C}$ 2N5321/5323		5	mA
		$V_{CE}=100\text{V}, V_{BE}=1.5\text{V}$ 2N5320/5322		100	$\mu\text{A}$
		$V_{CE}=75\text{V}, V_{BE}=1.5\text{V}$ 2N5321/5323		100	$\mu\text{A}$
Emitter Cut Off Current	$I_{EBO}$	$V_{BE}=5\text{V}, I_C=0$ 2N5321/5323		100	$\mu\text{A}$
		$V_{BE}=7\text{V}, I_C=0$ 2N5320/5322		100	$\mu\text{A}$

SILICON POWER SWITCHING TRANSISTORS

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TO-18  
Metal Can Package

ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$  unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
DC Current Gain	$^*h_{FE}$	$I_C=1\text{A}, V_{CE}=2\text{V}$ 2N5320/5322 *	10			
		$I_C=0.5\text{A}, V_{CE}=4\text{V}$ 2N5320/5322 2N5321/5323	30 40		130 250	
Collector Emitter Saturation Voltage	$^*V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$ 2N5320 2N5321 2N5322 2N5323			0.5 0.8 0.7 1.2	V V V V
Base Emitter On Voltage	$^*V_{BE(on)}$	$I_C=500\text{mA}, V_{CE}=4\text{V}$ 2N5320/5322 2N5321/5323			1.1 1.4	V V

DYNAMIC CHARACTERISTICS

Small Signal Current Gain	$h_{fe}$	$I_C=50\text{mA}, V_{CE}=4\text{V}, f=10\text{MHz}$	5			
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SWITCHING CHARACTERISTICS

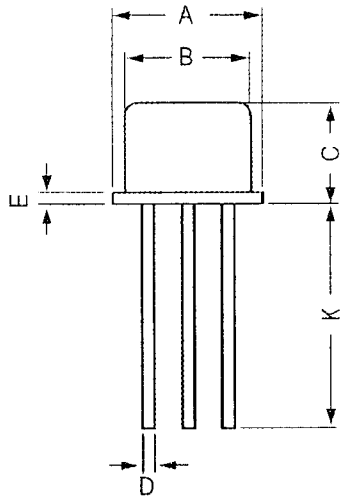
Turn On time	$t_{on}$	$V_{CC}=30\text{V}, I_C=500\text{mA}, I_{B1}=50\text{mA}$ 2N5320/5321 2N5322/5323			80 100	ns ns
Turn Off time	$t_{off}$	$V_{CC}=30\text{V}, I_C=500\text{mA}, I_{B1}=I_{B2}=50\text{mA}$ 2N5320/5321 2N5322/5323			800 1000	ns ns

\*Pulsed: Pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$

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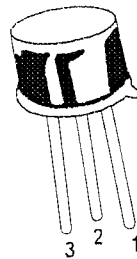
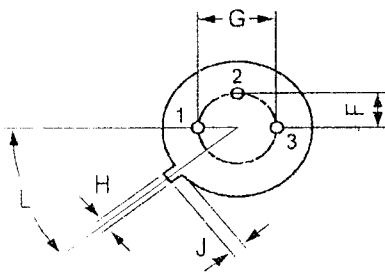
TO-39  
 Metal Can Package

TO-39 Metal Can Package



All dimensions are in mm

DIM	MIN	MAX
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	—	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	—
L	42 DEG	48 DEG



PIN CONFIGURATION  
 1. EMITTER  
 2. BASE  
 3. COLLECTOR