

TO-39 NPN SILICON PLANAR SWITCHING TRANSISTORS

Switching And Linear Application DC And VHF Amplifier Applications

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	2N2219A	UNIT
Collector -Emitter Voltage	VCEO	40	V
Collector -Base Voltage	VCBO	75	V
Emitter -Base Voltage	VEBO	6.0	V
Collector Current Continuous	IC	800	mA
Power Dissipation @Ta=25 degC	PD	800	mW
Derate Above 25deg C		4.57	mW/deg C
@ Tc=25 degC	PD	3.0	W
Derate Above 25deg C		17.1	mW/deg C
Operating And Storage Junction Temperature Range	Tj, Tstg	-65 to +200	deg C

ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)

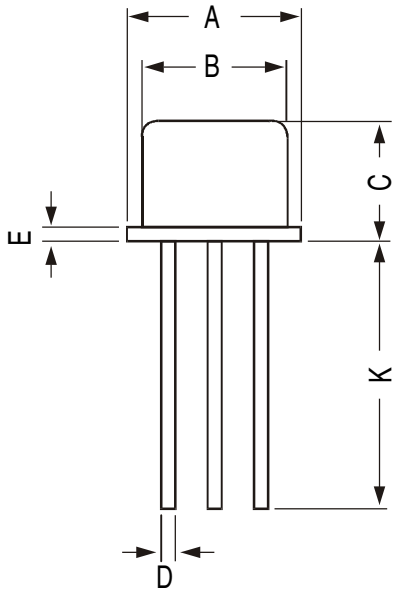
DESCRIPTION	SYMBOL	TEST CONDITION	VALUE		UNIT
			MIN	MAX	
Collector -Emitter Voltage	VCEO	IC=10mA, IB=0	40	-	V
Collector -Base Voltage	VCBO	IC=10uA, IE=0	75	-	V
Emitter-Base Voltage	VEBO	IE=10uA, IC=0	6.0	-	V
Collector-Cut off Current	ICBO	VCB=60V, IE=0	-	10	nA
		Ta=150 deg C			
		VCB=60V, IE=0	-	10	uA
Emitter-Cut off Current	ICEX	VCE=60V, VEB=3V	-	10	nA
Base-Cut off Current	IEBO	VEB=3V, IC=0	-	10	nA
	IBL	VCE=60V, VEB=3V	-	20	nA
Collector Emitter Saturation Voltage	VCE(Sat)*	IC=150mA, IB=15mA	-	0.3	V
		IC=500mA, IB=50mA		1.0	V
Base Emitter Saturation Voltage	VBE(Sat) *	IC=150mA, IB=15mA	-	0.6-1.2	V
		IC=500mA, IB=50mA	-	2.0	V

ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)**2N2219A**

DESCRIPTION	SYMBOL	TEST CONDITION		UNIT	
DC Current Gain	hFE	IC=0.1mA, VCE=10V	>35		
		IC=1mA, VCE=10V	>50		
		IC=10mA, VCE=10V	>75		
			Ta=55 deg C		
			IC=10mA, VCE=10V	>35	
			IC=150mA, VCE=10V	100-300	
			IC=150mA, VCE=1V	>50	
		IC=500mA, VCE=10V	>40		
<u>DYNAMIC CHARACTERISTICS</u>					
Small Signal Current Gain	hfe	ALL f=1kHz IC=1mA, VCE=10V	50-300		
		IC=10mA, VCE=10V	75-375		
Input Impedance	hie	IC=1mA, VCE=10V	2.0-8.0	kohms	
		IC=10mA, VCE=10V	0.25-1.25		
Voltage Feedback Ratio	hre	IC=1mA, VCE=10V	<8.0	x10-4	
		IC=10mA, VCE=10V	<4.0		
Out put Admittance	hoe	IC=1mA, VCE=10V	5.0-35	umhos	
		IC=10mA, VCE=10V	25-200		
Collector Base Time Constant	rb'Cc	IE=20mA, VCB=20V f=31.8MHz	<150	ps	
Real Part Common-Emitter High Frequency Input Impedance	Re(hie)	IC=20mA, VCE=20V f=300MHz	<60	ohms	
Noise Figure	NF	IC=100uA, VCE=10V Rs=1kohms, f=1kHz	- <4.0	dB	
<u>DYNAMIC CHARACTERISTICS</u>					
Transistors Frequency	ft	IC=20mA, VCE=20V f=100MHz	>300	MHz	
Out-Put Capacitance	Cob	VCB=10V, IE=0 f=100kHz	<8.0	pF	
Input Capacitance	Cib	VEB=0.5V, IC=0 f=100kHz	<25	pF	
SWITCHING Time					
Delay time	td	IC=150mA, IB1=15mA	<10	ns	
Rise time	tr	VCC=30V, VBE=0.5V -	<25	ns	
Storage time	ts	IC=150mA, IB1=	<225	ns	
Fall time	tf	IB2=15mA, VCC=30V -	<60	ns	

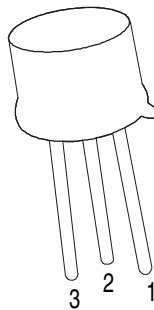
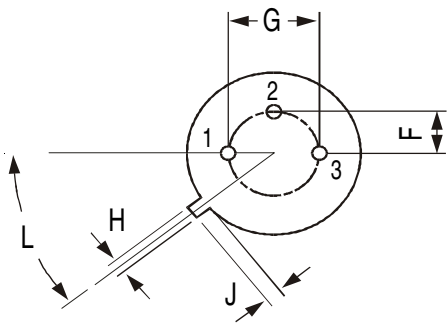
*Pulse Condition: Pulse Width=300us, Duty Cycle=2%

TO-39 Metal Can Package



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

All dimensions are in mm



PIN CONFIGURATION

1. EMITTER
2. BASE
3. COLLECTOR

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