

Obsolete

M.C.C.

Micro Commercial Components

RoHS COMPLIANT

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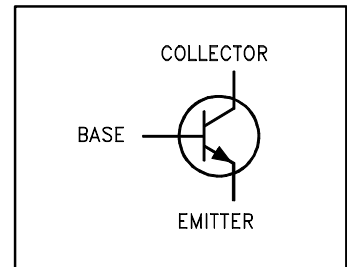
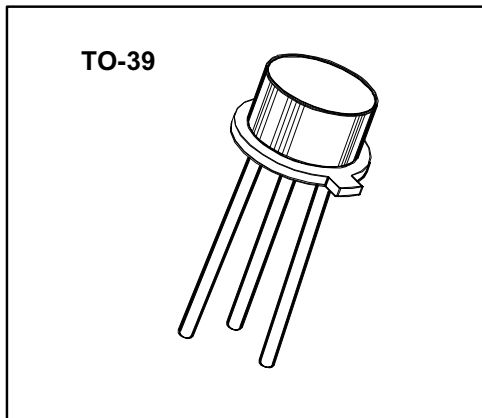
2N2219A

SWITCHING
TRANSISTOR

SMALL SIGNAL
BIPOLAR
NPN SILICON

Features

- Collector - Base Voltage 75 V
- Collector - Current 800 mA
- Medium Current, Bipolar Transistor
- Marking: Type number
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)



ABSOLUTE MAXIMUM RATINGS

Collector - Emitter Voltage	V_{CEO}	50	Vdc
Collector - Base Voltage	V_{CBO}	75	Vdc
Emitter - Base Voltage	V_{EBO}	6	Vdc
Collector Current - Continuous	I_C	800	mAdc
Total Device Dissipation @ $T_A = 25\text{ }^\circ\text{C}$	P_D	0.8	WATTS
Derate above $25\text{ }^\circ\text{C}$		4.6	mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25\text{ }^\circ\text{C}$	P_D	1.0	WATTS
Derate above $25\text{ }^\circ\text{C}$		17.0	mW/ $^\circ\text{C}$
Operating Junction&Storage Temperature Range	T_J, T_{stg}	- 55 to +200	$^\circ\text{C}$

Thermal Characteristics

CHARACTERISTIC	SYMBOL	MAX	UNIT
Thermal Resistance, Junction to Ambient	$R\theta_{JA}$	217	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R\theta_{JC}$	59	$^\circ\text{C/W}$

Notes:1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.

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Electrical Characteristics (T_A = 25°C unless otherwise noted)

OFF CHARACTERISTIC	SYMBOL	MIN	MAX	UNIT
Collector - Emitter Breakdown Voltage (1) (I _C = 10 mA dc, I _B = 0)	V(BR) _{CEO}	50		Vdc
Collector - Base Breakdown Voltage (I _C = 10 μAdc, I _E = 0)	V(BR) _{CBO}	75		Vdc
Emitter - Base Breakdown Voltage (I _E = 10 μAdc, I _C = 0)	V(BR) _{EBO}	6		Vdc
Collector - Emitter Cutoff Current (V _{CE} = 50 Vdc)	I _{CES}		10	nAdc
Collector - Base Cutoff Current (V _{CB} = 60 Vdc, I _E = 0)	I _{CBO}		10	nAdc
(V _{CB} = 60 Vdc, I _E = 0, T _A = 150 °C)			10	μAdc
Emitter - Base Cutoff Current (V _{EB} = 4 Vdc)	I _{EBO}		10	nAdc
(V _{EB} = 6 Vdc)			10	μAdc

ON CHARACTERISTIC	SYMBOL	MIN	MAX	UNIT
DC Current Gain	h _{FE}			
(I _C = 0.1 mA dc, V _{CE} = 10 Vdc) (1)		50		
(I _C = 1 mA dc, V _{CE} = 10 Vdc) (1)		75	325	
(I _C = 10 mA dc, V _{CE} = 10 Vdc) (1)		100		
(I _C = 150 mA dc, V _{CE} = 10 Vdc) (1)		100	300	
(I _C = 500 mA dc, V _{CE} = 10 Vdc) (1)		30		
(I _C = 10 mA dc, V _{CE} = 10 Vdc, T _J = -55°C) (1)		35		
Collector - Emitter Saturation Voltage	V _{CE(sat)}			
(I _C = 150 mAdc, I _B = 15 mAdc) (1)			0.3	Vdc
(I _C = 500 mAdc, I _B = 50 mAdc) (1)			1.0	Vdc
Base - Emitter Saturation Voltage	V _{BE(sat)}			
(I _C = 150 mAdc, I _B = 15 mAdc) (1)		0.6	1.2	Vdc
(I _C = 500 mAdc, I _B = 50 mAdc) (1)			2.0	Vdc

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%

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Electrical Characteristics (T_A = 25°C unless otherwise noted)

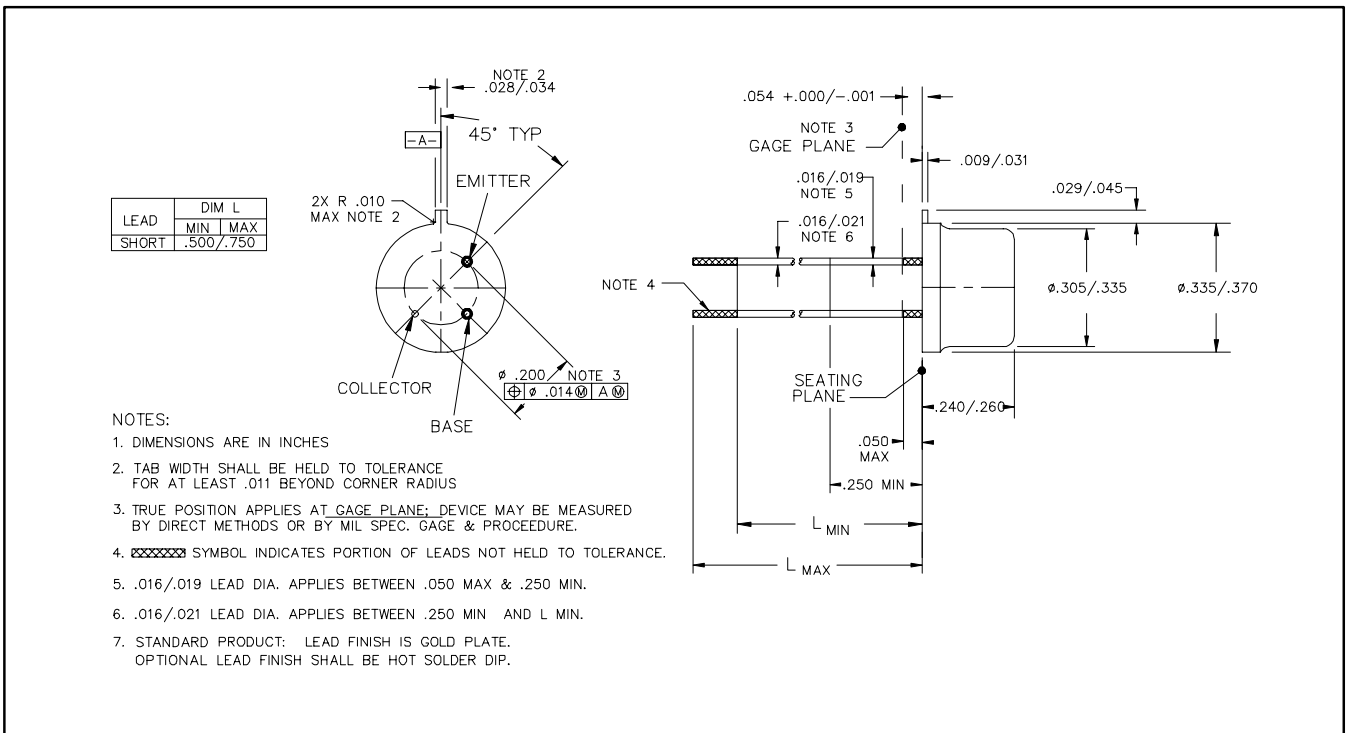
SMALL - SIGNAL CHARACTERISTICS	SYMBOL	MIN	MAX	UNIT
Output Capacitance (V _{CB} = 10 Vdc, I _E = 0, 100kHz ≤ f ≤ 1 MHz)	C _{obo}		8.0	pF
Input Capacitance (V _{EB} = 0.5 Vdc, I _C = 0, 100kHz ≤ f ≤ 1 MHz)	C _{ibo}		25	pF

SWITCHING CHARACTERISTICS	SYMBOL	MIN	MAX	UNIT
Turn - On Time (V _{CC} = 30 Vdc, I _C = 150 mAdc, I _{B1} = 15 mAdc) (See FIGURE 1)	t _{on}		35	ns
Turn - Off Time (V _{CC} = 30 Vdc, I _C = 150 mAdc, I _{B1} = - I _{B2} = 15 mAdc) (See FIGURE 2)	t _{off}		300	ns

Small - Signal AC Characteristics (T_A = 25°C)

LOW FREQUENCY	SYMBOL	MIN	MAX	UNIT
Common - Emitter Forward Current Transfer Ratio (I _C = 1 mA, V _{CE} = 10 V, f = 1kHz)	h _{fe}	75		
HIGH FREQUENCY				
Common - Emitter Forward Current Transfer Ratio (I _C = 20 mA, V _{CE} = 20 V, f = 100 MHz)	h _{fe}	2.5	12	

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TO-39 CASE OUTLINE

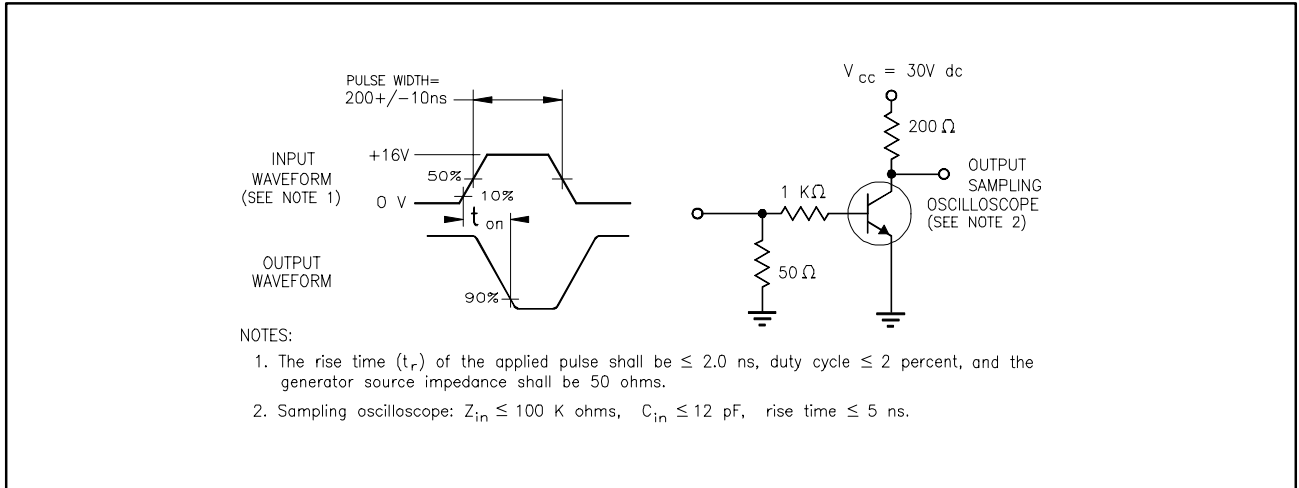


FIGURE 1 Saturated Turn-on Time Test Circuit

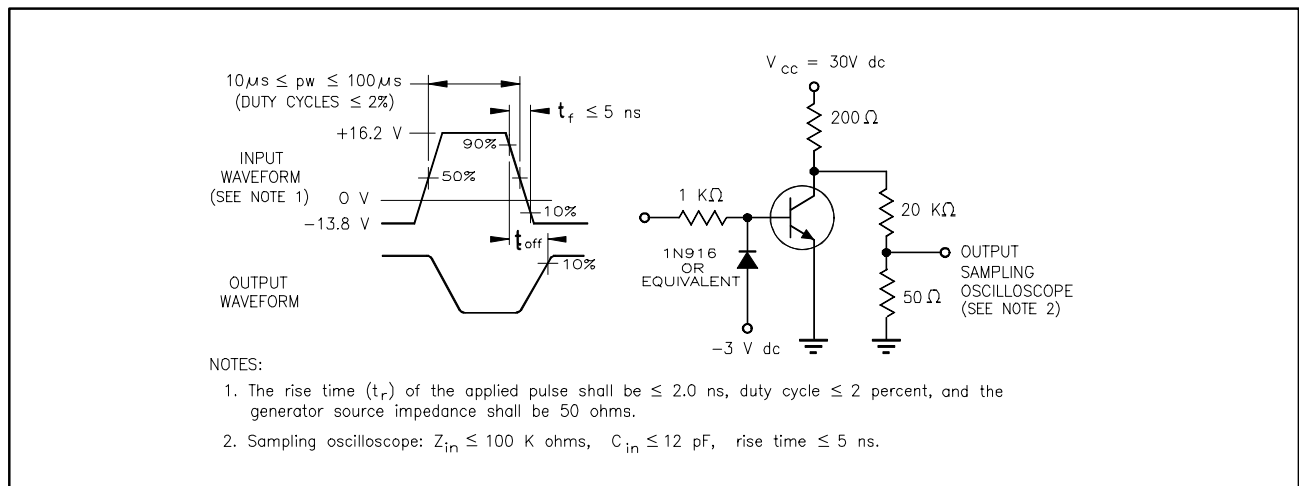


FIGURE 2 Saturated Turn-off Time Test Circuit

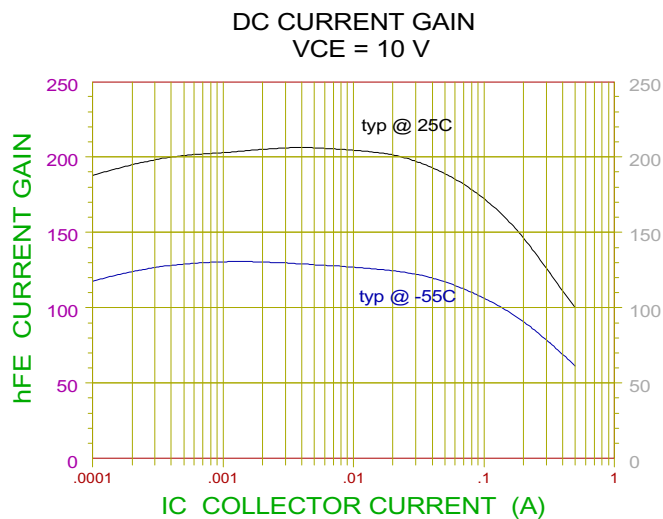


FIGURE 3

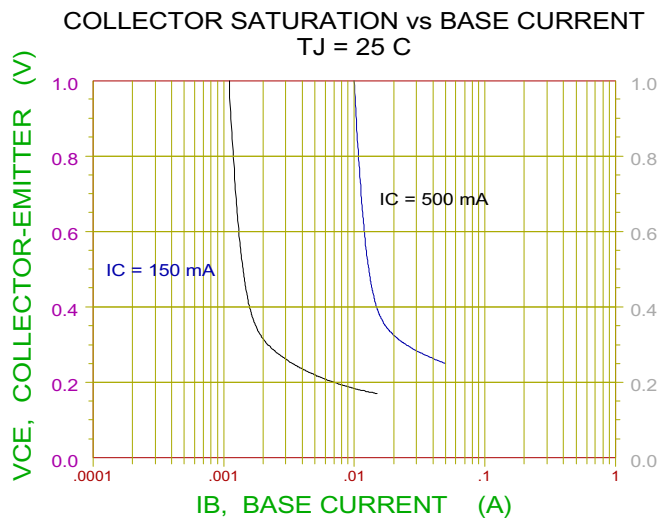


FIGURE 4

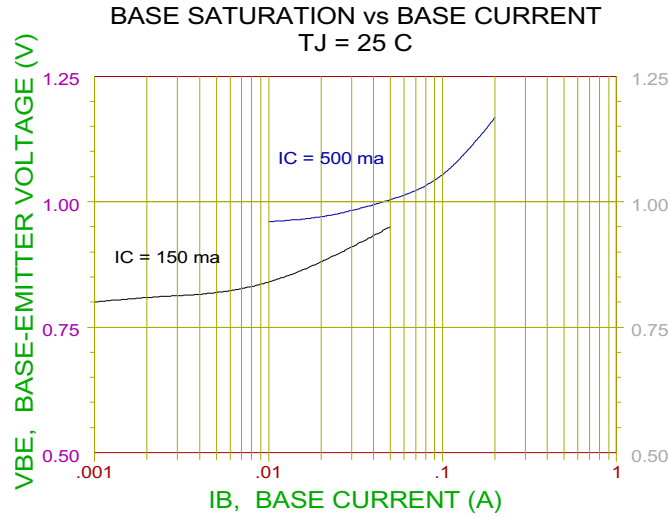


FIGURE 5

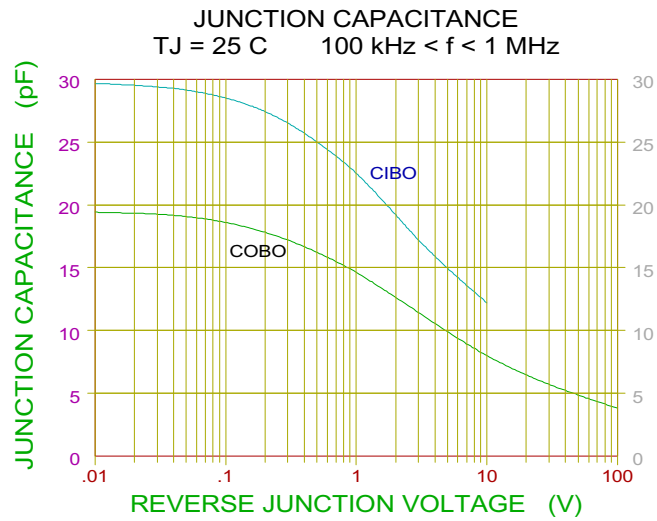


FIGURE 6

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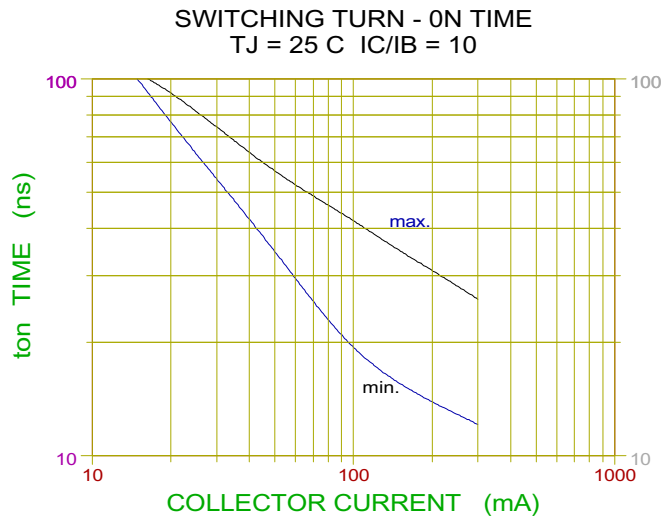


FIGURE 7

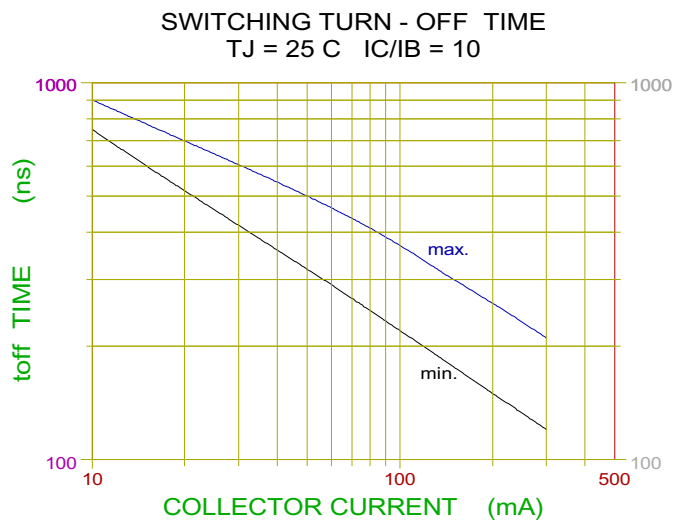


FIGURE 8

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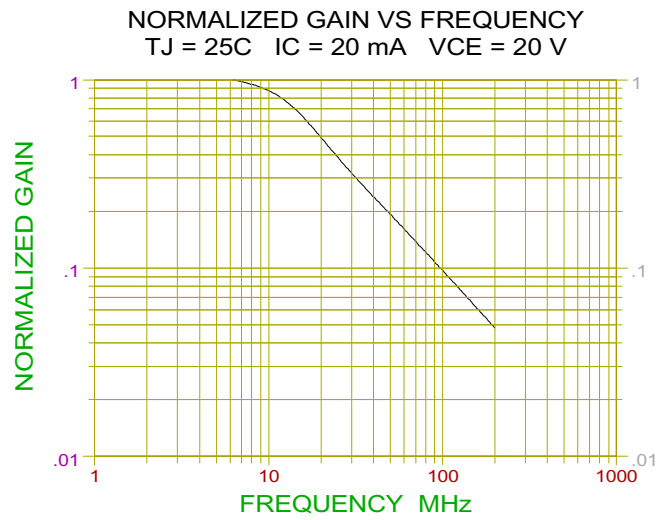


FIGURE 9

Ordering Information :

Device	Packing
Part Number-BP	Bulk; 50pcs/Box

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