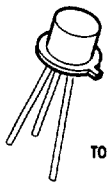
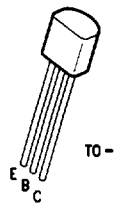
National Semiconductor

2N2907 2N2907A PN2907 PN2907A MMBT2907 MMBT2907A MPQ2907*



TL/G/10100-9



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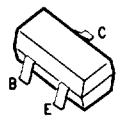
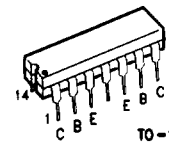


TL/G/10100-5



TL/G/10100-7

PNP General Purpose Amplifier

Electrical Characteristics T_A = 25°C unless otherwise noted

Symbol	Parameter		Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage, (Note 1)				
	(I_C = 10 mAdc, I_B = 0)	2907	40		Vdc
		2907A	60		
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage				
	(I_C = 10 μAdc, I_E = 0)		60		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage				
	(I_E = 10 μAdc, I_C = 0)		5.0		Vdc
I_{CEX}	Collector Cutoff Current				
	(V_{CE} = 30 Vdc, V_{BE} = 0.5 Vdc)			50	nAdc
I_{CBO}	Collector Cutoff Current				
	(V_{CB} = 50 Vdc, I_E = 0)	2907		0.020	
		2907A		0.010	μAdc
	(V_{CB} = 50 Vdc, I_E = 0, T_A = 150°C)	2907		20	
		2907A		10	
I_B	Base Cutoff Current				
	(V_{CE} = 30 Vdc, V_{EB} = 0.5 Vdc)			50	nAdc

*16-SOIC version also available. Contact factory.

PNP General Purpose Amplifier (Continued)

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

Symbol	Parameter		Min	Max	Units
ON CHARACTERISTICS					
h_{FE}	DC Current Gain				
	(I_C = 0.1 mAdc, V_{CE} = 10 Vdc)	2907	35		
		2907A	75		
	(I_C = 1.0 mAdc, V_{CE} = 10 Vdc)	2907	50		
		2907A	100		
	(I_C = 10 mAdc, V_{CE} = 10 Vdc)	2907	75		
		2907A	100		
	(I_C = 150 mAdc, V_{CE} = 10 Vdc), (Note 1)		100	300	
	(I_C = 500 mAdc, V_{CE} = 10 Vdc), (Note 1)	2907	30		
		2907A	50		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage, (Note 1)				
	(I_C = 150 mAdc, I_B = 15 mAdc)			0.4	Vdc
	(I_C = 500 mAdc, I_B = 50 mAdc)			1.6	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage				
	(I_C = 150 mAdc, I_B = 15 mAdc), (Note 1)			1.3	Vdc
	(I_C = 500 mAdc, I_B = 50 mAdc)			2.6	
SMALL-SIGNAL CHARACTERISTICS					
f_T	Current Gain—Bandwidth Product (I_C = 50 mAdc, V_{CE} = 20 Vdc, f = 100 MHz)		200		MHz
C_{obo}	Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz)			8.0	pF
C_{ibo}	Input Capacitance (V_{EB} = 2.0 Vdc, I_C = 0, f = 100 kHz)			30	pF
SWITCHING CHARACTERISTICS					
t_{on}	Turn-On Time	(V_{CC} = 30 Vdc, I_C = 150 mAdc, I_{B1} = 15 mAdc)	Except MPQ2907	45	ns
t_d	Delay Time			10	ns
t_r	Rise Time			40	ns
t_{off}	Turn-Off Time	(V_{CC} = 6.0 Vdc, I_C = 150 mAdc, I_{B1} = I_{B2} = 15 mAdc)	Except MPQ2907	100	ns
t_s	Storage Time			80	ns
t_f	Fall Time			30	ns

Note 1: Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

Note 2: For characteristics curves, see Process 63.

Note 3: 2N also available in JAN/TX/V series.