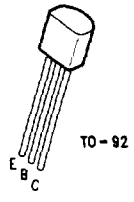
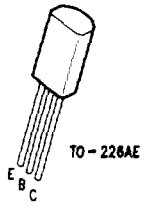
National Semiconductor

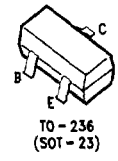
MPSA42 MPSW42 MMBTA42



TL/G/10100-1



TL/G/10100-4



TL/G/10100-5

NPN High Voltage 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 = 1.0 mAdc, I_B = 0)	300		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)	300		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_E = 100 μAdc, I_C = 0)	6.0		Vdc
I_{CBO}	Collector Cutoff Current (V_{CB} = 200 Vdc, I_E = 0) (V_{CB} = 160 Vdc, I_E = 0)		0.1	μAdc
I_{EBO}	Emitter Cutoff Current (V_{EB} = 6.0 Vdc, I_C = 0) (V_{EB} = 4.0 Vdc, I_C = 0)		0.1	μAdc
ON CHARACTERISTICS (Note 1)				
h_{FE}	DC Current Gain (I_C = 1.0 mAdc, V_{CE} = 10 Vdc) (I_C = 10 mAdc, V_{CE} = 10 Vdc) (I_C = 30 mAdc, V_{CE} = 10 Vdc)	 25 40 40		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C = 20 mAdc, I_B = 2.0 mAdc)		0.5	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (I_C = 20 mAdc, I_B = 2.0 mAdc)		0.9	Vdc
SMALL-SIGNAL CHARACTERISTICS				
f_T	Current-Gain—Bandwidth Product (I_C = 10 mAdc, V_{CE} = 20 Vdc, f = 100 MHz)	50		MHz
C_{cb}	Collector-Base Capacitance (V_{CB} = 20 Vdc, I_E = 0, f = 1.0 MHz)		3.0	pF

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

Note 2: For characteristics curves, see Process 48.