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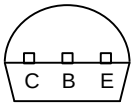
2N4401

NPN General Purpose Amplifier

Features

- Through Hole Package
- Capable of 600mWatts of Power Dissipation

Pin Configuration
Bottom View



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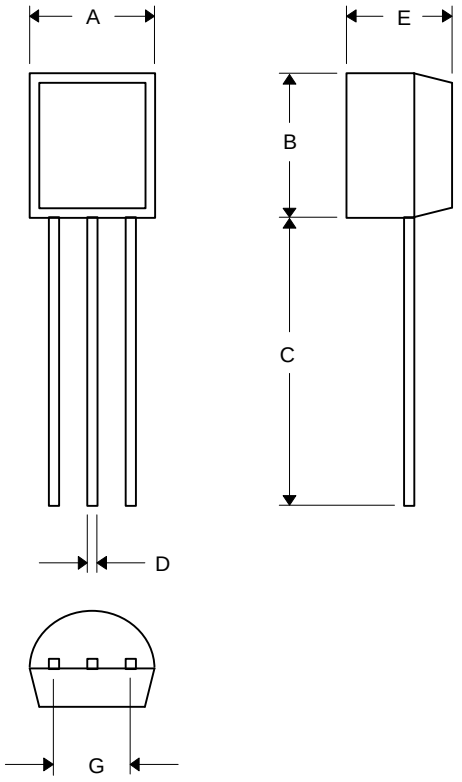

DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.170	.190	4.33	4.83	
B	.170	.190	4.30	4.83	
C	.550	.590	13.97	14.97	
D	.010	.020	0.36	0.56	
E	.130	.160	3.30	3.96	
G	.010	.104	2.44	2.64	

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* (I_C=1.0mAdc, I_B=0)	40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_C=10mAdc, I_E=0)	60		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_E=0.1mAdc, I_C=0)	6.0		Vdc
I_{BL}	Base Cutoff Current (V_{CE}=35Vdc, V_{BE}=0.4Vdc)		0.1	µAdc
I_{CEX}	Collector Cutoff Current (V_{CE}=35Vdc, V_{BE}=0.4Vdc)		0.1	µAdc
ON CHARACTERISTICS				
h_{FE}	DC Current Gain*			
	(I_C=0.1mAdc, V_{CE}=1.0Vdc)	20		
	(I_C=1.0mAdc, V_{CE}=1.0Vdc)	40		
	(I_C=10mAdc, V_{CE}=1.0Vdc)	80		
	(I_C=150mAdc, V_{CE}=1.0Vdc)	100	300	
	(I_C=500mAdc, V_{CE}=1.0Vdc)	40		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage			
	(I_C=150mAdc, I_B=15mAdc)		0.4	Vdc
	(I_C=500mAdc, I_B=50mAdc)		0.75	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage			
	(I_C=150mAdc, I_B=15mAdc)	0.75	0.95	Vdc
	(I_C=500mAdc, I_B=50mAdc)		1.2	
SMALL-SIGNAL CHARACTERISTICS				
f_T	Current Gain-Bandwidth Product (I_C=20mAdc, V_{CE}=10Vdc, f=100MHz)	250		MHz
C_{cb}	Collector-Base Capacitance (V_{CB}=5.0Vdc, I_E=0, f=100kHz)		6.5	pF
C_{eb}	Emitter-Base Capacitance (V_{BE}=0.5Vdc, I_C=0, f=100kHz)		30.0	pF
SWITCHING CHARACTERISTICS				
t_d	Delay Time	(V_{CC}=30Vdc, V_{BE}=0.2Vdc	15	ns
t_r	Rise Time	I_C=150mAdc, I_{B1}=15mAdc)	20	ns
t_s	Storage Time	(V_{CC}=30Vdc, I_C=150mAdc	225	ns
t_f	Fall Time	I_{B1}=I_{B2}=15mAdc)	30	ns

*Pulse Width ≤ 300µs, Duty Cycle≤ 2.0%

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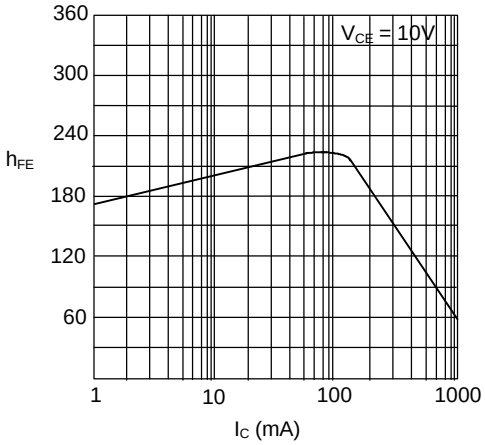
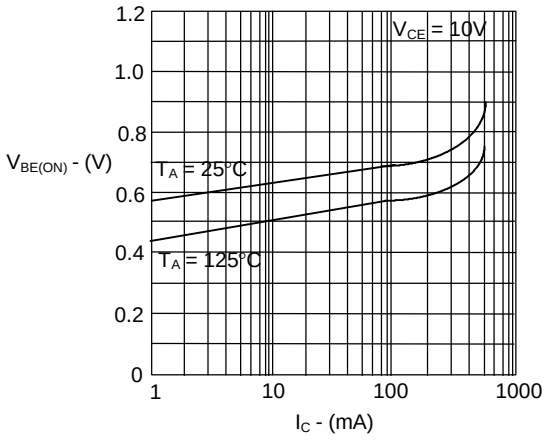
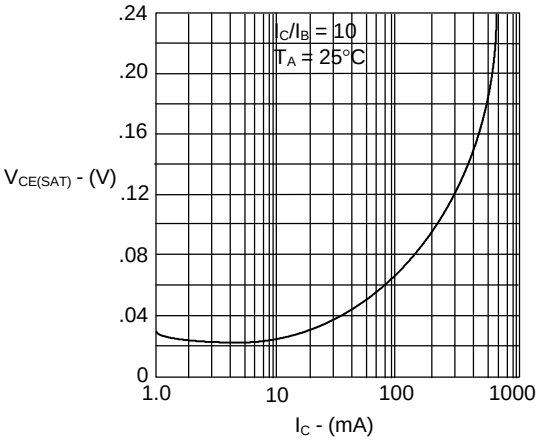
DC Current Gain vs Collector Current



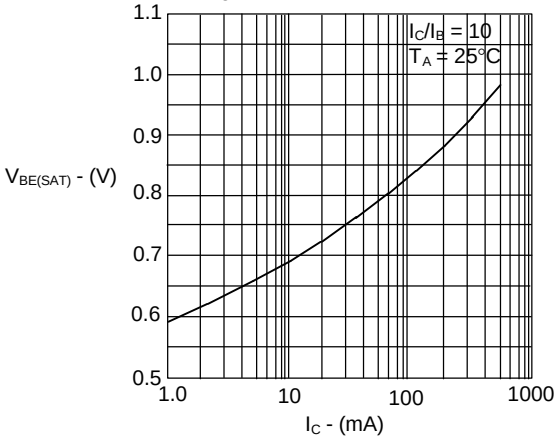
Base-Emitter ON Voltage vs Collector Current



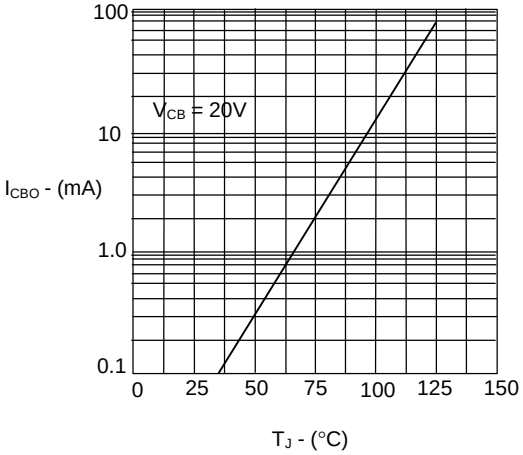
Collector-Emitter Saturation Volatge vs Collector Current



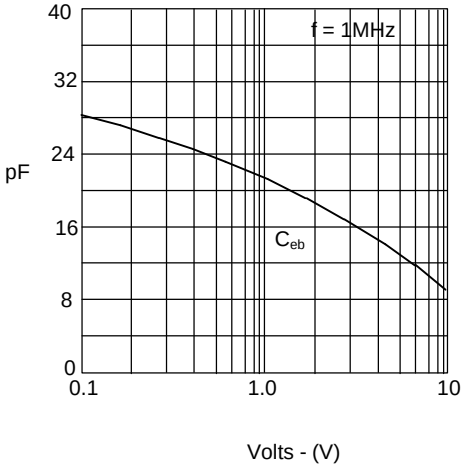
Base-Emitter Saturation Voltage vs Collector Current



Collector-Base Diode Reverse Current vs Temperature



Input Capacitance vs Reverse Bias Voltage



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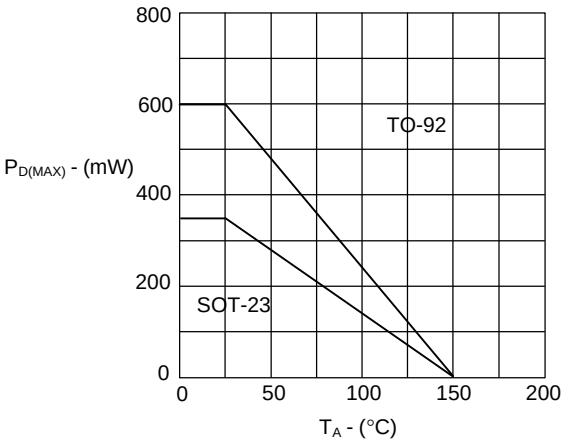
Maximum Power Dissipation vs
Ambient Temperature



Output Capacitance vs
Reverse Bias Voltage