

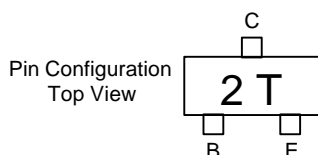


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## MMBT4403

### Features

- Surface Mount SOT-23 Package
- Capable of 350mWatts of Power Dissipation



### Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
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#### OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ( $I_C=1.0mA$ , $I_B=0$ )	40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C=100\mu A$ , $I_E=0$ )	40		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E=100\mu A$ , $I_C=0$ )	5.0		Vdc
$I_{BL}$	Base Cutoff Current ( $V_{CE}=30V$ , $V_{BE}=3.0V$ )		0.1	$\mu A$
$I_{CEX}$	Collector Cutoff Current ( $V_{CE}=30V$ , $V_{BE}=3.0V$ )		0.1	$\mu A$

#### ON CHARACTERISTICS

$h_{FE}$	DC Current Gain* ( $I_C=0.1mA$ , $V_{CE}=1.0V$ ) ( $I_C=1.0mA$ , $V_{CE}=1.0V$ ) ( $I_C=10mA$ , $V_{CE}=1.0V$ ) ( $I_C=150mA$ , $V_{CE}=2.0V$ ) ( $I_C=500mA$ , $V_{CE}=2.0V$ )	30 60 100 100 20	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=150mA$ , $I_B=15mA$ ) ( $I_C=500mA$ , $I_B=50mA$ )		0.4 0.75	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C=150mA$ , $I_B=15mA$ ) ( $I_C=500mA$ , $I_B=50mA$ )	0.75	0.95 1.30	Vdc

#### SMALL-SIGNAL CHARACTERISTICS

$f_T$	Current Gain-Bandwidth Product ( $I_C=20mA$ , $V_{CE}=10V$ , $f=100MHz$ )	200		MHz
$C_{cb}$	Output Capacitance ( $V_{CB}=10V$ , $I_E=0$ , $f=1.0MHz$ )		8.5	pF
$C_{eb}$	Input Capacitance ( $V_{EB}=0.5V$ , $I_C=0$ , $f=1.0MHz$ )		30.0	pF

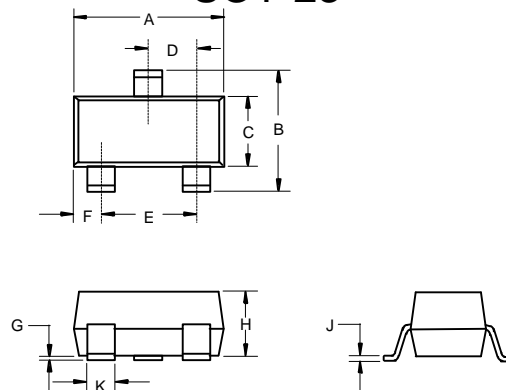
#### SWITCHING CHARACTERISTICS

$t_d$	Delay Time	( $V_{CC}=3.0V$ , $V_{BE}=2.0V$ )	15	ns
$t_r$	Rise Time	( $I_C=150mA$ , $I_{B1}=15mA$ )	20	ns
$t_s$	Storage Time	( $V_{CC}=3.0V$ , $I_C=150mA$ )	225	ns
$t_f$	Fall Time	( $I_{B1}=I_{B2}=15mA$ )	30	ns

\*Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$

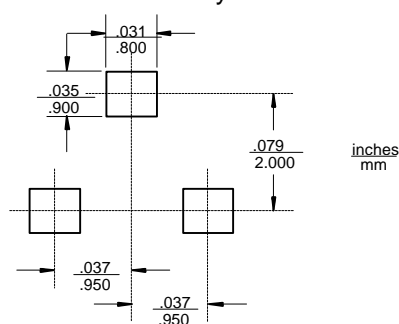
## PNP General Purpose Amplifier

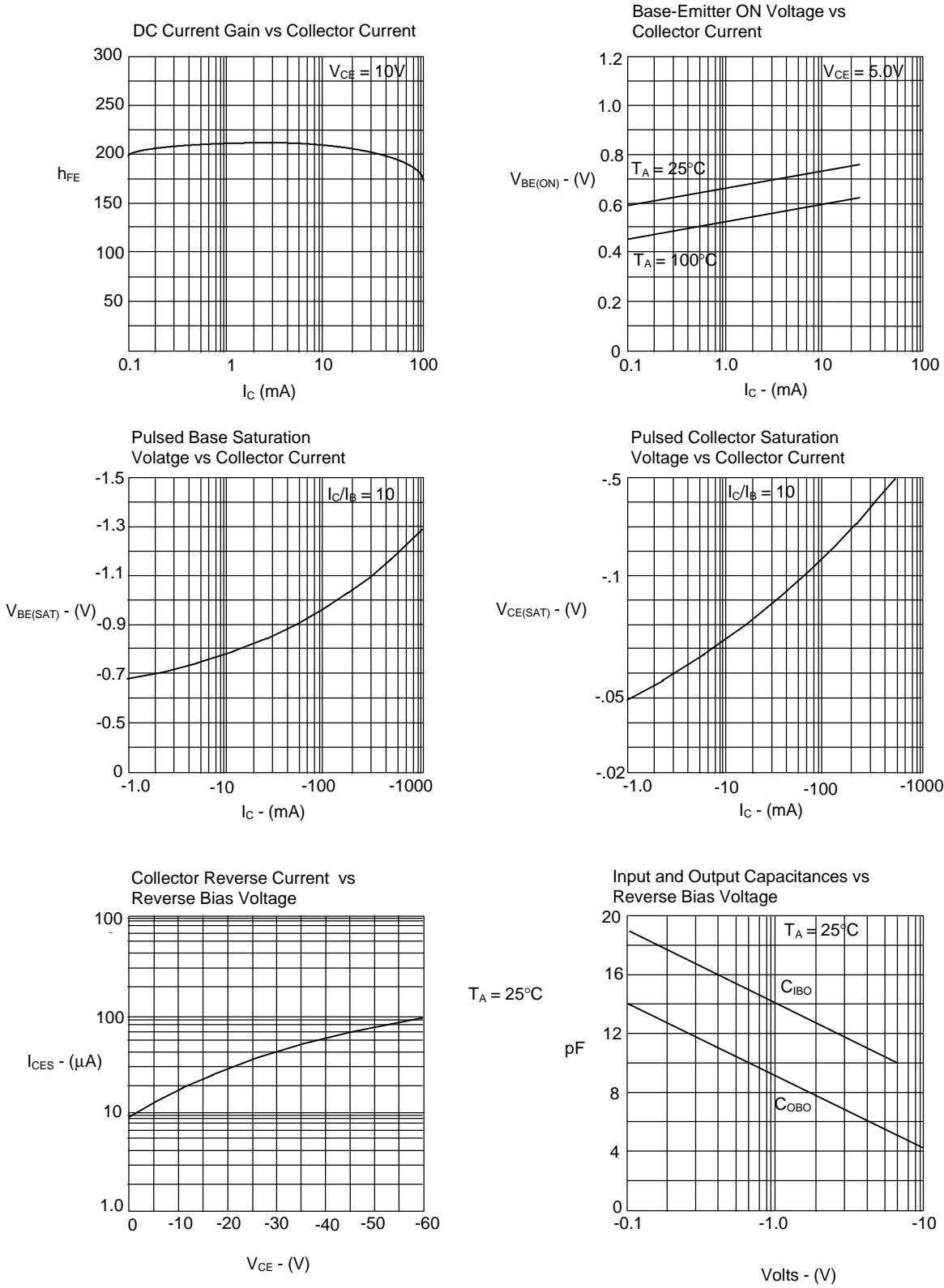
### SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.098	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

### Suggested Solder Pad Layout





# MMBT4403

