

# FMMTA06

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## SOT23 NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

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### SUMMARY

$V_{(BR)CEO} > 80V$

$I_{C(cont)} = 500mA$

### DESCRIPTION

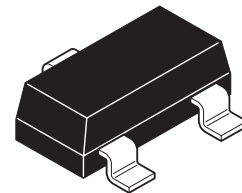
80V medium power NPN transistor in a compact SOT23 package

### FEATURES

- 80V  $V_{CEO}$
- Compact SOT23 package
- $H_{FE} 50 @ I_C = 100mA$

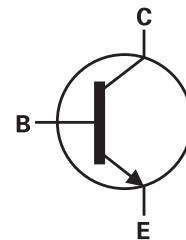
### APPLICATIONS

- Low power motor driving circuits



SOT23

### SYMBOL



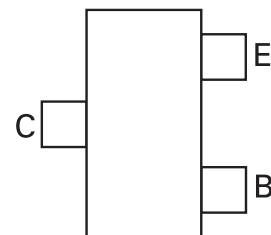
### ORDERING INFORMATION

DEVICE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
FMMTA06TA	7"	8mm	3,000

### DEVICE MARKING

- 1G

### PINOUT



TOP VIEW

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## ABSOLUTE MAXIMUM RATINGS

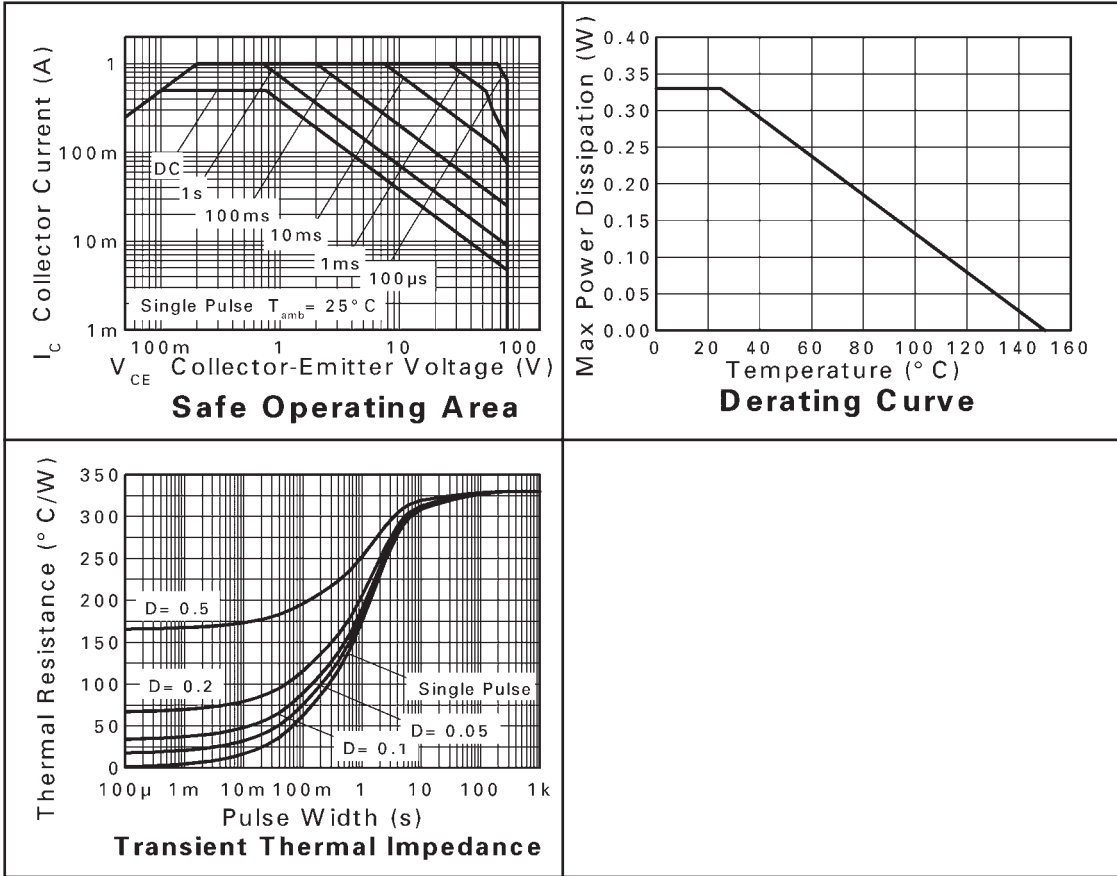
PARAMETER	SYMBOL	LIMIT	UNIT
Collector-base voltage	$V_{CBO}$	80	V
Collector-emitter voltage	$V_{CEO}$	80	V
Emitter-base voltage	$V_{EBO}$	4	V
Peak pulse current	$I_{CM}$	1	A
Continuous collector current	$I_C$	500	mA
Base current	$I_B$	100	mA
Power dissipation @ $T_A = 25^\circ\text{C}$	$P_D$	330	mW
Linear derating factor		2.64	mW/ $^\circ\text{C}$
Operating and storage temperature	$T_j; T_{stg}$	-55 to + 150	$^\circ\text{C}$

## THERMAL RESISTANCE

PARAMETER	SYMBOL	VALUE	UNIT
Junction to ambient	$R\theta_{JA}$	379	$^\circ\text{C}/\text{W}$

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## CHARACTERISTICS



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## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

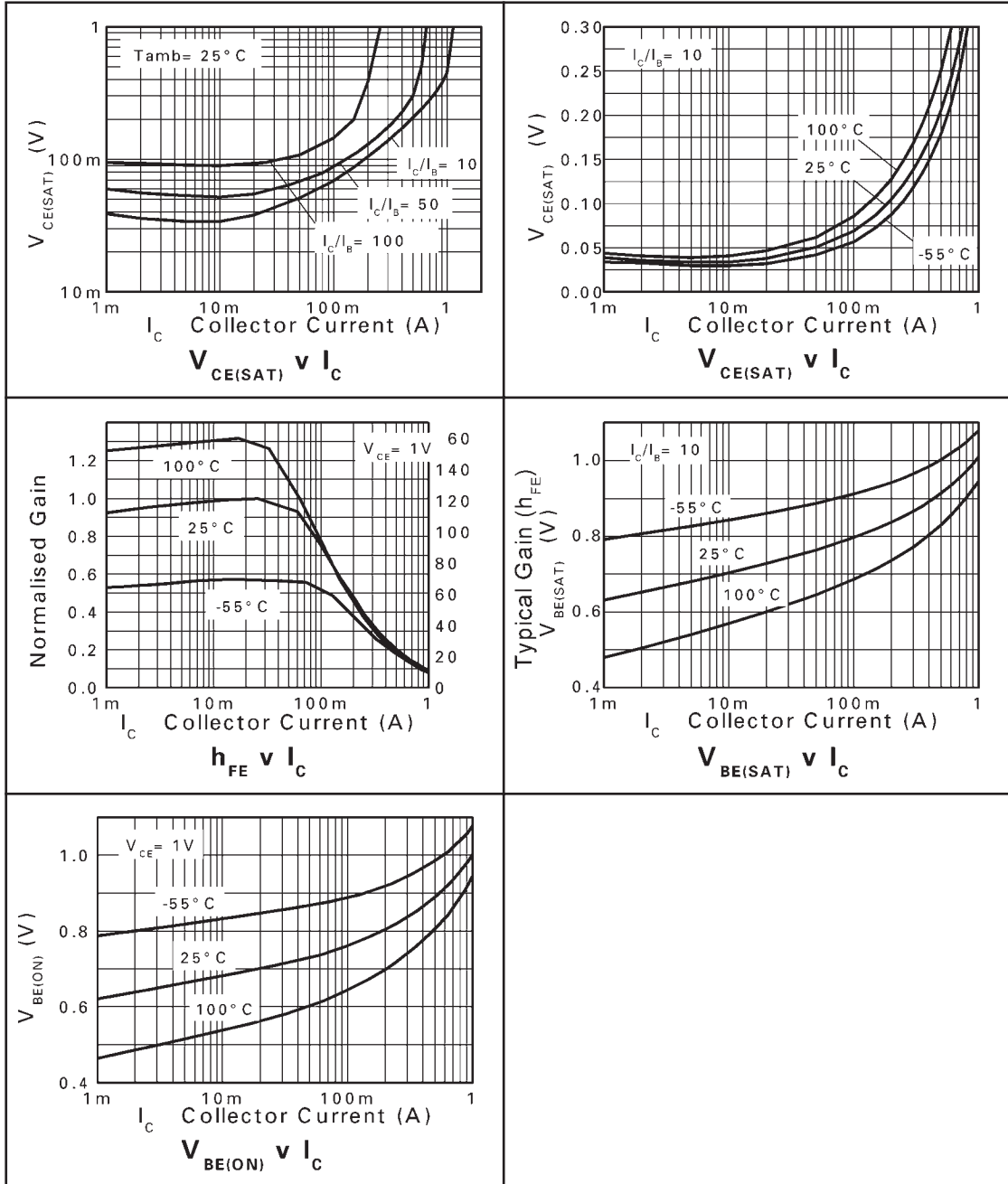
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Collector-base breakdown voltage	$V_{(BR)CBO}$	80			V	$I_C = 1\text{mA}$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	80			V	$I_C = 10\text{mA}^*$
Emitter-base breakdown voltage	$V_{(BR)EBO}$	4			V	$I_E = 100\mu\text{A}$
Collector-emitter cut-off current	$I_{CES}$			100	nA	$V_{CES} = 60\text{V}$
Collector-base cut-off current	$I_{CBO}$			100	nA	$V_{CB} = 80\text{V}$
Static forward current transfer ratio	$H_{FE}$	50 50	120			$I_C = 10\text{mA}, V_{CE} = 1\text{V}^*$ $I_C = 100\text{mA}, V_{CE} = 1\text{V}^*$
Collector-emitter saturation voltage	$V_{CE(sat)}$			0.25	V	$I_C = 100\text{mA}, I_B = 10\text{mA}^*$
Base-emitter turn-on voltage	$V_{BE(on)}$			1.2	V	$I_C = 0.1\text{A}, V_{CE} = 1\text{V}^*$
Transition frequency	$f_T$	100				$I_C = 10\text{mA}, V_{CE} = 2\text{V},$ $f = 100\text{MHz}$

### NOTES

\* Measured under pulsed conditions. Pulse width=  $300\mu\text{s}$ . Duty cycle  $\leq 2\%$

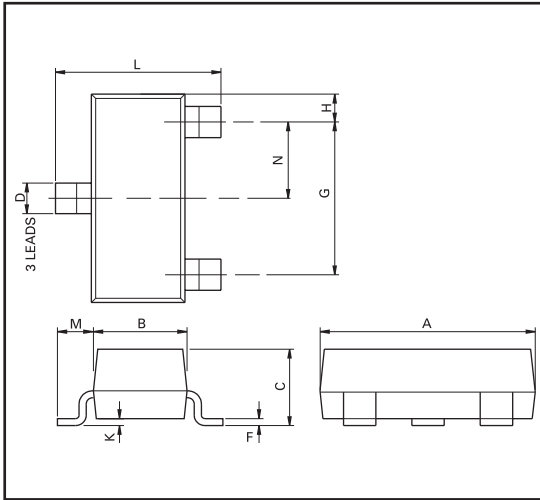
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## TYPICAL CHARACTERISTICS



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## PACKAGE OUTLINE



Controlling dimensions are in millimeters. Approximate conversions are given in inches

## PACKAGE DIMENSIONS

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Max	Max
A	2.67	3.05	0.105	0.120	H	0.33	0.51	0.013	0.020
B	1.20	1.40	0.047	0.055	K	0.01	0.10	0.0004	0.004
C	—	1.10	—	0.043	L	2.10	2.50	0.083	0.0985
D	0.37	0.53	0.015	0.021	M	0.45	0.64	0.018	0.025
F	0.085	0.15	0.0034	0.0059	N	0.95 NOM		0.0375 NOM	
G	1.90 NOM		0.075 NOM		—	—		—	

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