

PART OBSOLETE - USE [MMBTA06-7-F](#)**FMMTA06****SOT23 NPN SILICON PLANAR MEDIUM POWER TRANSISTORS****SUMMARY** $V_{(BR)CEO} > 80V$  $I_{C(cont)} = 500mA$ **DESCRIPTION**

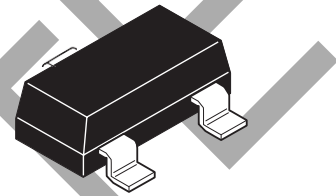
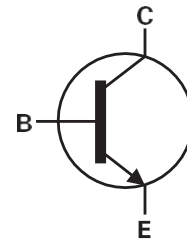
80V medium power NPN transistor in a compact SOT23 package

**FEATURES**

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

**APPLICATIONS**

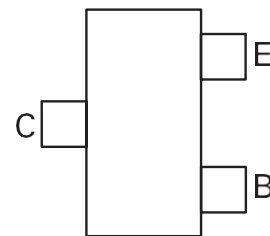
- Low power motor driving circuits

**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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## FMMTA06

## ABSOLUTE MAXIMUM RATINGS

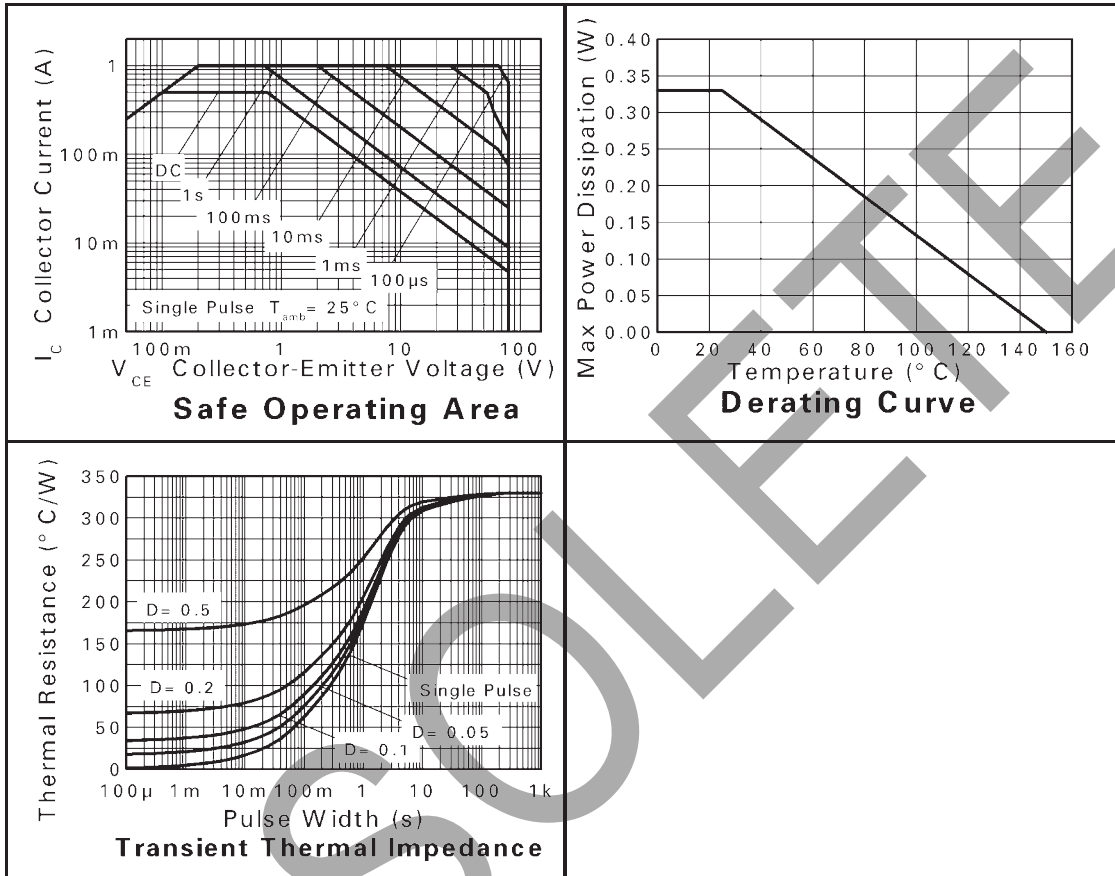
PARAMETER	SYMBOL	LIMIT	UNIT
Collector-base voltage	$V_{CBO}$	80	V
Collector-emitter voltage	$V_{CEO}$	80	V
Emitter-base voltage	$V_{EBO}$	4	V
Peak pulse current	$I_{CM}$	1	A
Continuous collector current	$I_C$	500	mA
Base current	$I_B$	100	mA
Power dissipation @ $T_A = 25^\circ\text{C}$	$P_D$	330	mW
Linear 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	$^\circ\text{C/W}$

# FMMTA06

## CHARACTERISTICS



## FMMTA06

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

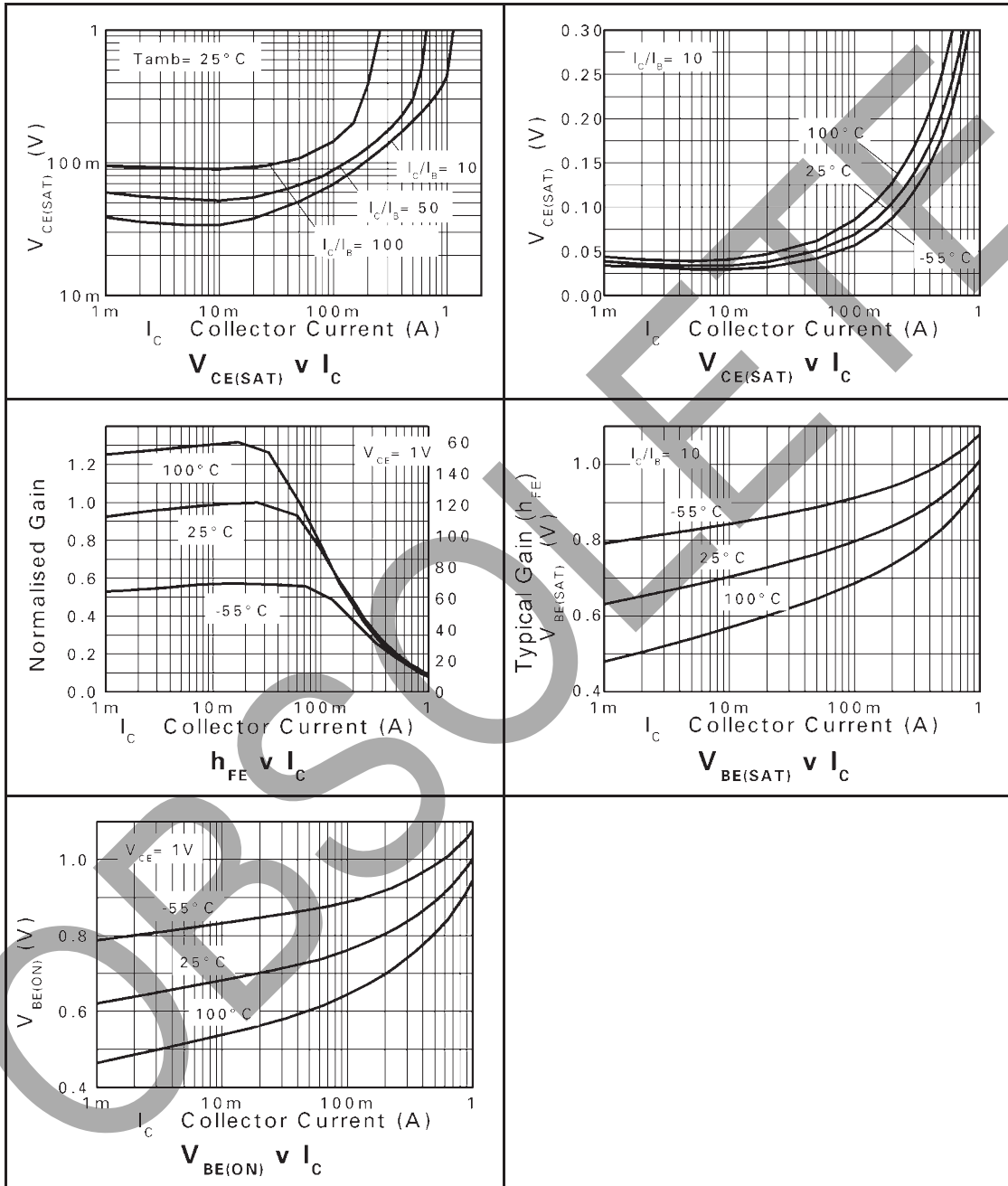
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Collector-base breakdown voltage	$V_{(BR)CBO}$	80			V	$I_C = 1\text{ mA}$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	80			V	$I_C = 10\text{ mA}^*$
Emitter-base breakdown voltage	$V_{(BR)EBO}$	4			V	$I_E = 100\text{ A}$
Collector-emitter cut-off current	$I_{CES}$			100	nA	$V_{CE} = 60\text{ V}$
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  $\mu$ s. Duty cycle <2%

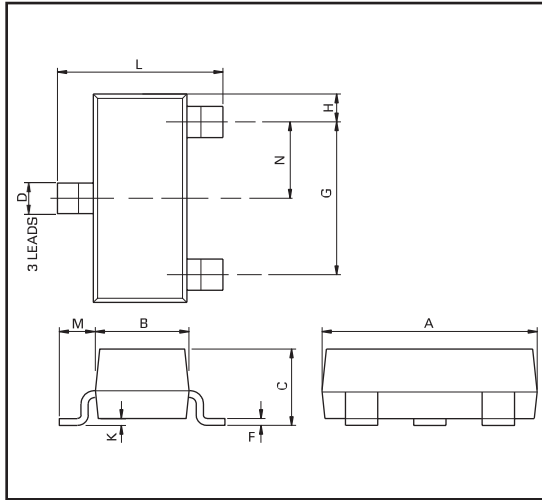
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## TYPICAL CHARACTERISTICS



# FMMTA06

## 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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