

FMMT493A

SOT23 60V NPN SILICON PLANAR MEDIUM POWER PLANAR TRANSISTOR

NPN: $V_{CEO} = 60V$, $I_C = 1A$, $V_{CE(SAT)} = 0.5V @ 1A$

Description:

This 60V NPN transistor provides users with performance combining low saturation and high h_{FE} with a continuous current capability of 1A, ensuring improved circuit efficiencies.

Features

Low saturation voltage

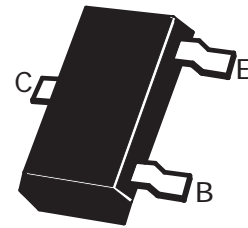
High h_{FE} min 300 @ 250mA

$I_C = 1A$

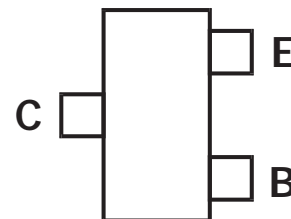
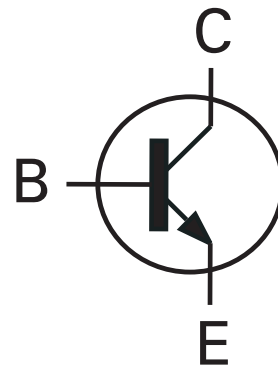
Applications

- Various driving functions including:-
 - Motors
 - Actuators
 - Solenoid & Relays
- Backlight Inverters.
- DC_DC Modules.

Device	Reel Size (inches)	Tape Width (mm)	Quantity Per Reel
FMMT493ATA	7	8mm embossed	3000 units
FMMT493ATC	13	8mm embossed	10000 units



SOT23



TOP VIEW

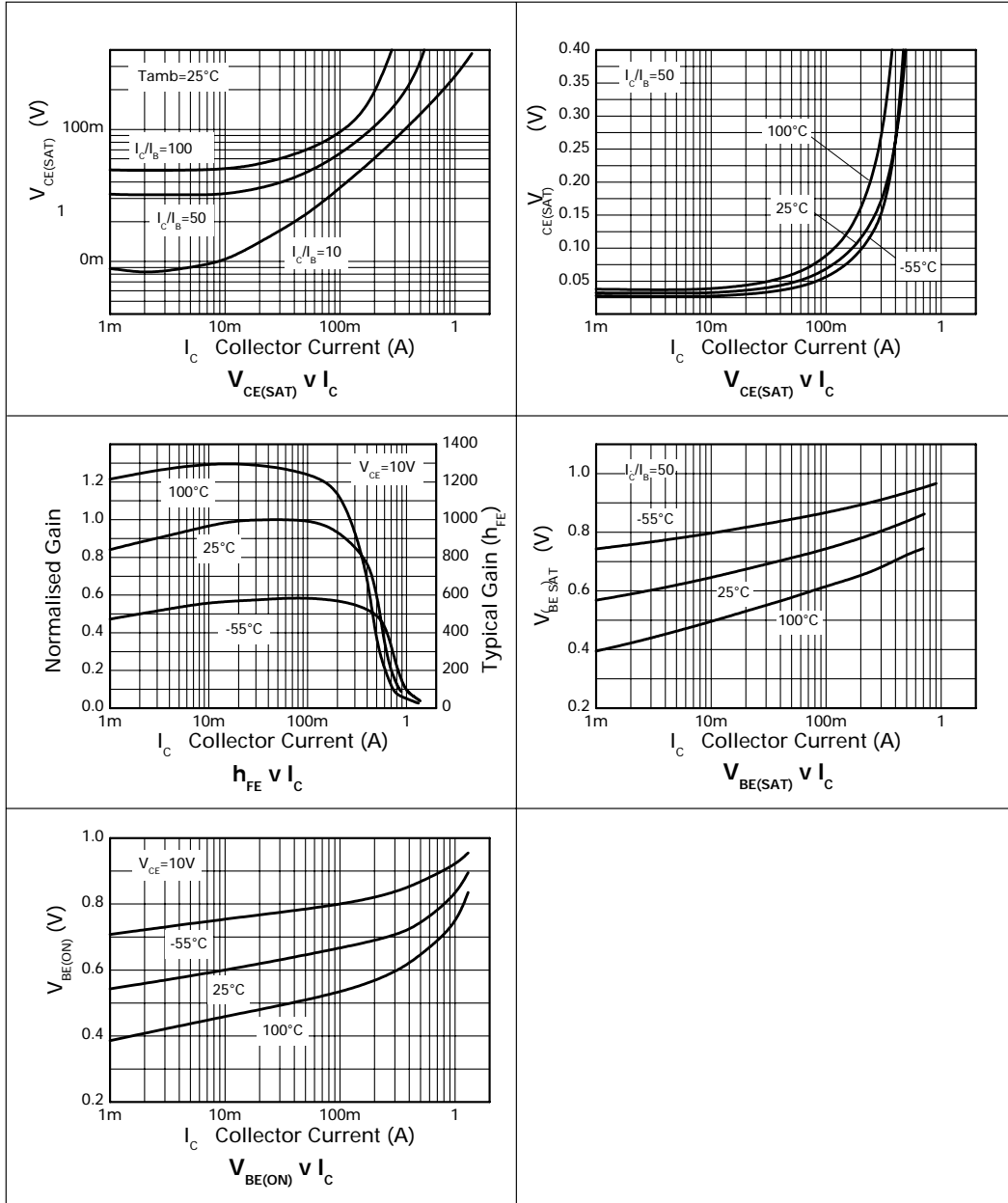
FMMT493A

ELECTRICAL CHARACTERISTICS (at Tamb = 25°C).

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	120		V	$I_C = 100\mu A$
Collector - Emitter Breakdown Voltage	$V_{CEO(SUS)}$	60		V	$I_C = 10mA^*$
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	5		V	$I_E = 100\mu A$
Collector Cut-Off Current	I_{CBO}		100	nA	$V_{CB} = 45V$
Collector Cut-Off Current	I_{CES}		100	nA	$V_{CES} = 45V$
Emitter Cut-Off Current	I_{EBO}		100	nA	$V_{EB} = 4V$
Collector - Emitter Saturation Voltage	$V_{CE(SAT)}$		0.25 0.5	V V	$I_C = 500mA, I_B = 50mA$ $I_C = 1A, I_B = 100mA$
Base - Emitter Saturation Voltage	$V_{BE(SAT)}$		1.15	V	$I_C = 1A, I_B = 100mA$
Base Emitter Turn On Voltage	$V_{BE(ON)}$		1.0	V	$I_C = 1A, V_{CE} = 10V$
Static Forward Current Transfer Ratio	h_{FE}	300 500 300 100 20	1200		$I_C = 1mA, V_{CE} = 10V$ $I_C = 150mA, V_{CE} = 10V$ $I_C = 250mA, V_{CE} = 10V$ $I_C = 500mA, V_{CE} = 10V$ $I_C = 1A, V_{CE} = 10V$
Transition Frequency	f_T	150		Mhz	$I_C = 50mA, V_{CE} = 10V$ $f = 100MHz$
Output Capacitance	C_{OBO}		10	pF	$V_{CB} = 10V, f = 1MHz$

*Measured under pulsed conditions. Pulse width = 300 μs . Duty Cycle <2%

ELECTRICAL CHARACTERISTICS



FMMT493A

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	120	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	1	A
Peak Pulse Current	I_{CM}	2	A
Base Current	I_B	200	mA
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	500	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

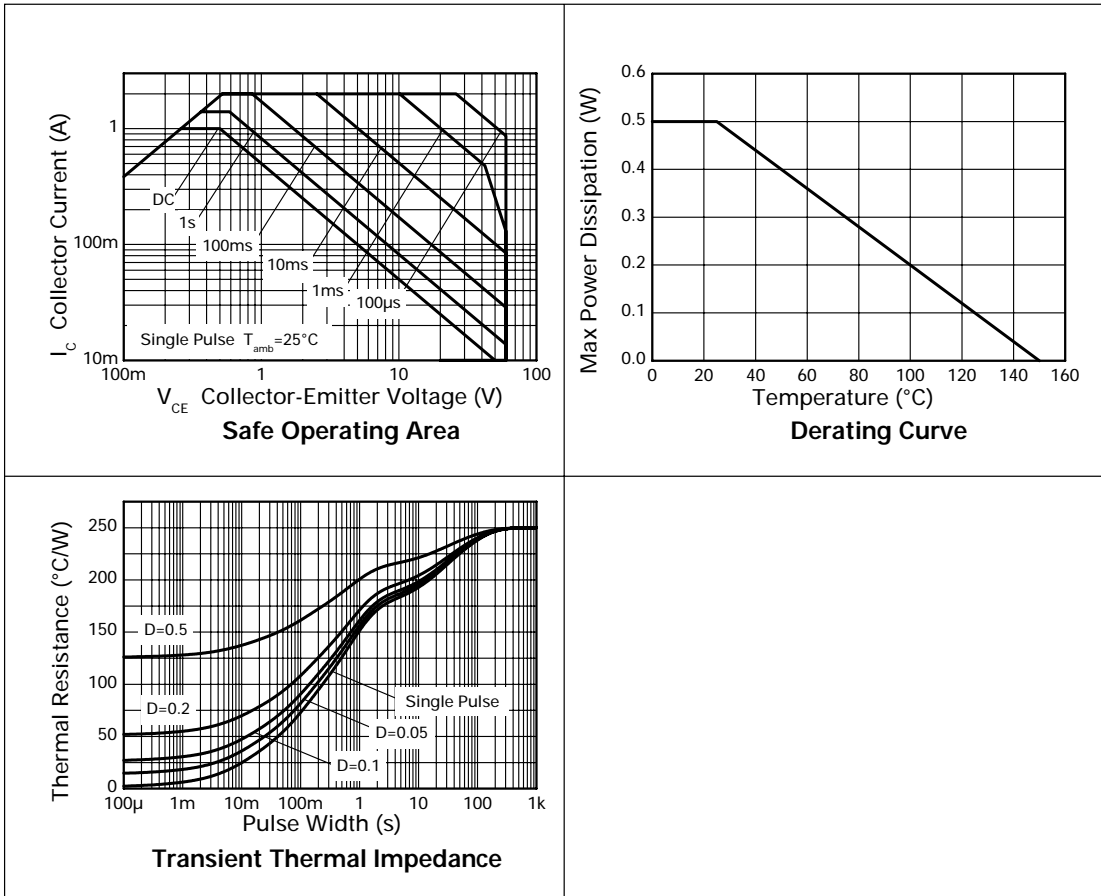
THERMAL RESISTANCE

PARAMETER	SYMBOL	VALUE	UNIT
Junction to Ambient (a)	$R_{\theta JA}$	250	$^{\circ}C/W$

Mounted on a 15mm x 15mm x 0.6mm alumina substrate connected using 25mm x 0.5 dia copper wire.

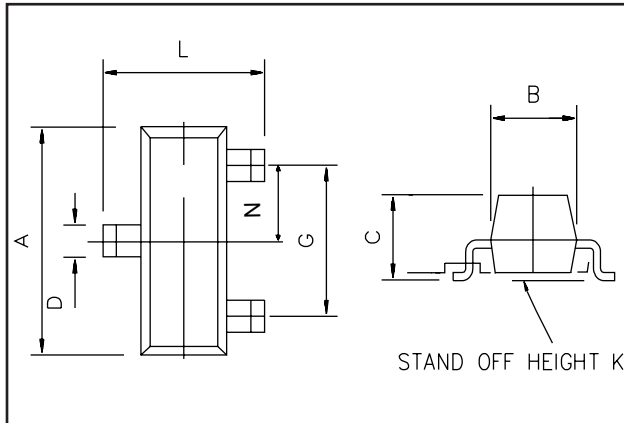
FMMT493A

THERMAL CHARACTERISTICS

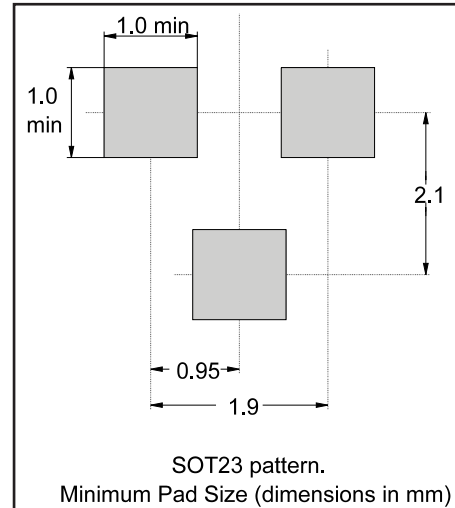


FMMT493A

PACKAGE DIMENSIONS



PAD LAYOUT DETAILS



DIM	Millimetres		Inches	
	Min	Max	Min	Max
A	2.67	3.05	0.105	0.120
B	1.20	1.40	0.047	0.055
C	-	1.10	-	0.043
D	0.37	0.53	0.0145	0.021
F	0.085	0.15	0.0033	0.0059
G	NOM 1.9		NOM 0.075	
K	0.01	0.10	0.0004	0.004
L	2.10	2.50	0.0825	0.0985
N	NOM 0.95		NOM 0.037	

© Zetex plc 2003

Europe

Zetex plc
Fields New Road
Chadderton
Oldham, OL9 8NP
United Kingdom
Telephone: (44) 161 622 4444
Fax: (44) 161 622 4446
hq@zetex.com

Zetex GmbH
Streitfeldstraße 19
D-81673 München
Germany
Telephone: (49) 89 45 49 49 0
Fax: (49) 89 45 49 49 49
europe.sales@zetex.com

Americas

Zetex Inc
700 Veterans Memorial Hwy
Hauppauge, NY 11788
USA
Telephone: (1) 631 360 2222
Fax: (1) 631 360 8222
usa.sales@zetex.com

Asia Pacific

Zetex (Asia) Ltd
3701-04 Metroplaza Tower 1
Hing Fong Road
Kwai Fong
Hong Kong
Telephone: (852) 26100 611
Fax: (852) 24250 494
asia.sales@zetex.com

These offices are supported by agents and distributors in major countries world-wide.

This publication is issued to provide outline information only which (unless agreed by the Company in writing) may not be used, applied or reproduced for any purpose or form part of any order or contract or be regarded as a representation relating to the products or services concerned. The Company reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service.

www.zetex.com

For the latest product information, log on to



ISSUE 2 - AUGUST 2003