

Plastic-Encapsulate Transistors

TRANSISTOR(NPN)

FEATURES

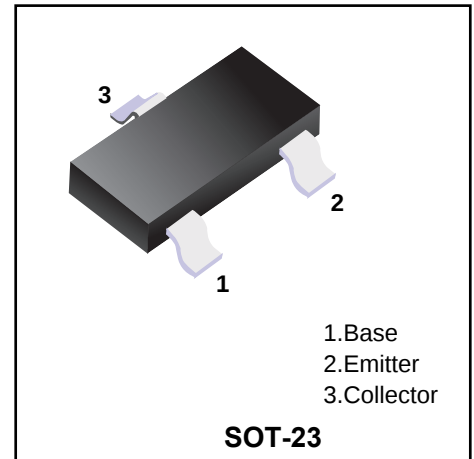
- ♦Extremely low saturation voltage
- ♦Complementary PN3 type: FMMT718

APPLICATIONS

- ♦Gate Driving MOSFETs and IGBTs
- ♦DC-DC converters
- ♦Charging circuit
- ♦Power switches

MECHANICAL DATA

- ♦Case :SOT-23
- ♦Epoxy UL: 94V-0
- ♦Mounting Position: Any



Marking Code

FMMT618

618

Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbol	Value	Unit
Collector-Base Voltage	VCBO	20	V
Collector-Emitter Voltage	VCEO	20	V
Emitter -Base Voltage	VEBO	5	V
Base Current	IB	0.5	A
Collector Current-Continuous	IC	2.5	A
Collector Power Dissipation	Pc	350	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55-+150	°C
Thermal resistance From junction to ambient	R_{θJA}	357	°C/W

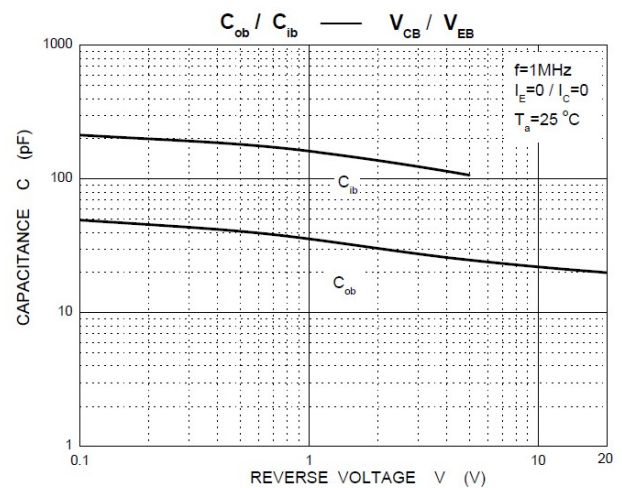
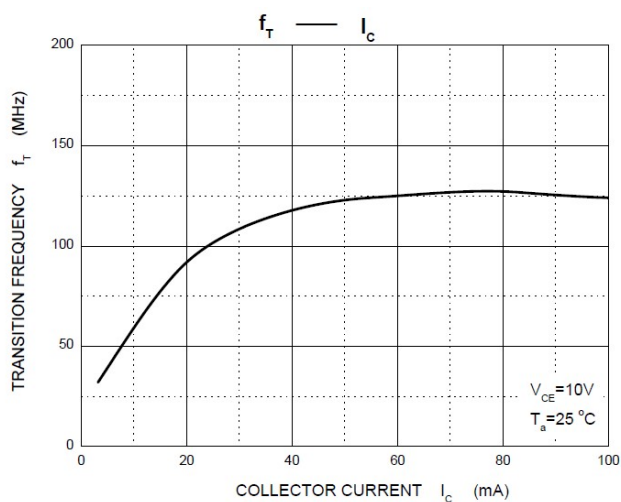
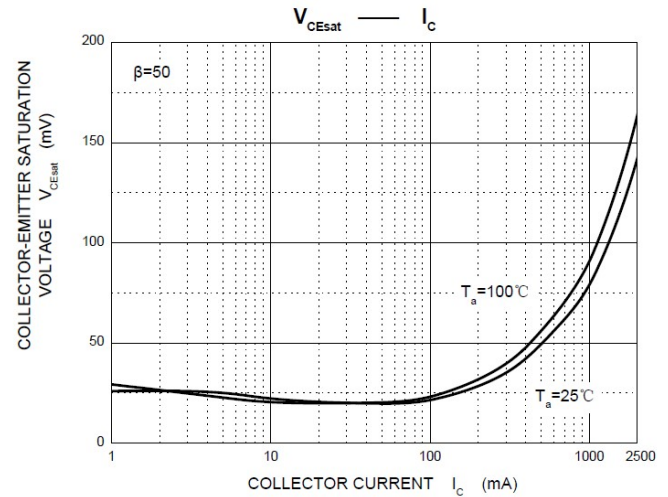
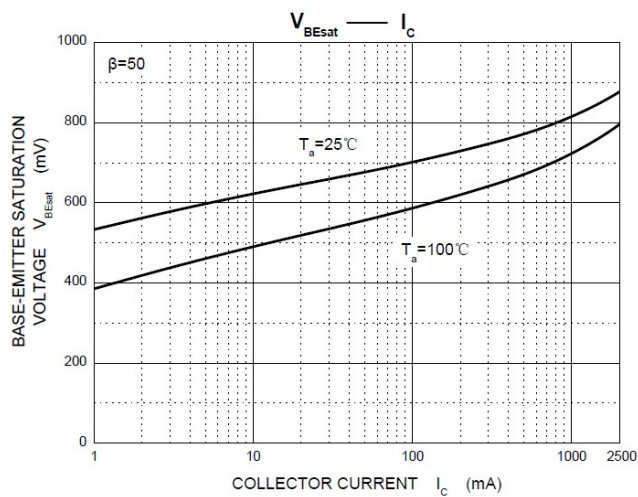
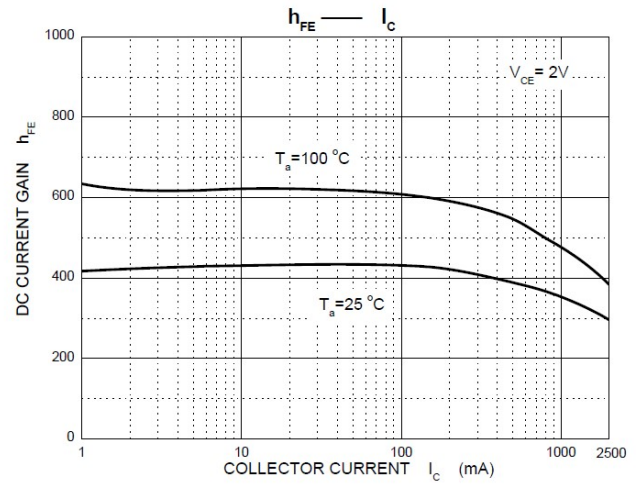
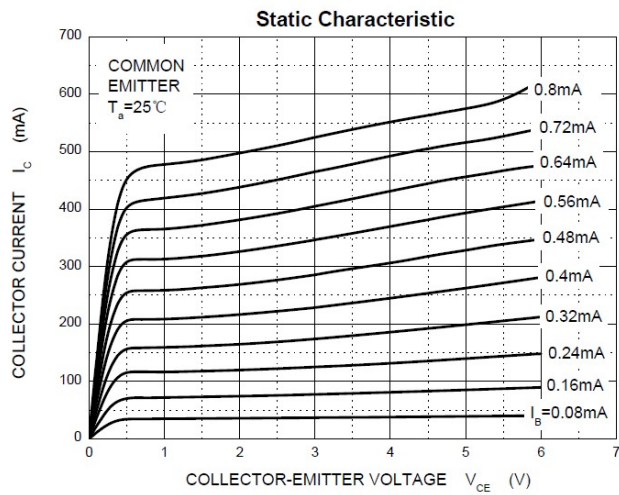
Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified).

Parameter	Test Condition	Symbols	Limits			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	$I_C=100\mu A, I_E=0$	$V(BR)_{CBO}$	20			V
Collector-emitter breakdown voltage	$I_C=10mA, I_B=0^*$	$V(BR)_{CEO}$	20			V
Emitter-base breakdown voltage	$I_E=100\mu A, I_C=0$	$V(BR)_{EBO}$	5			V
Collector cut-off current	$V_{CB}=16V, I_E=0$	I_{CBO}			100	nA
Emitter cut-off current	$V_{EB}=4V, I_C=0$	I_{EBO}			100	nA
DC current gain	$V_{CE}=2V, I_C=10mA$	$h_{FE(1)}$	200			
	$V_{CE}=2V, I_C=200mA^*$	$h_{FE(2)}$	300			
	$V_{CE}=2V, I_C=2A^*$	$h_{FE(3)}$	200			
	$V_{CE}=2V, I_C=4A^*$	$h_{FE(4)}$	100			
Collector-emitter saturation voltage	$I_C=100mA, I_B=10mA^*$	$V_{CE(sat)}$			15	mV
	$I_C=1A, I_B=10mA^*$				150	mV
	$I_C=2.5A, I_B=50mA^*$				200	mV
Base -emitter saturation voltage	$I_C=2.5A, I_B=50mA^*$	$V_{BE(sat)}$			1.00	V
Base -emitter on voltage	$V_{CE}=2V, I_C=2.5A^*$	$V_{BE(on)}$			1.00	V
Transition frequency	$V_{CE}=10V, I_C=1A, f=100MHz$	f_T	100			MHz
Collector output capacitance	$V_{CB}=10V, f=1MHz$	C_{ob}			30	pF
Turn-on time	$V_{CE}=10V, I_C=1A, I_{B1}=-I_{B2}=10mA$	$t_{(on)}$		170		ns
Turn-off time		$t_{(off)}$		400		ns

* Measured under pulsed conditions, Pulse width=300us, Duty cycle≤2%

Typical Characteristics



Ordering information

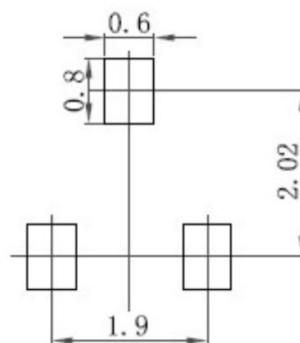
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-23

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
e	1.9		75	
e1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

The recommended mounting pad size



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