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SEMICONDUCTOR



ESD



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MOV



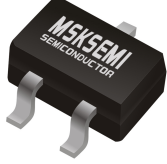
GDT



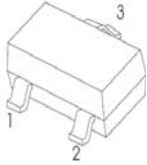
PLED

Product data sheet

FMMT619 TRANSISTOR (NPN)



SOT - 23



- 1. BASE
- 2. EMITTER
- 3. COLLECTOR

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	50	V
V _{CEO}	Collector-Emitter Voltage	50	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current -Continuous	2	A
P _C	Power Dissipation	0.35	W
R _{θJA}	Thermal Resistance from Junction to Ambient	357	°C/W
P _{CM}	Maximum Power Dissipation (note 1)	0.625	W
R _{θJA}	Thermal Resistance from Junction to Ambient (note 1)	200	°C/W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C

MARKING:619

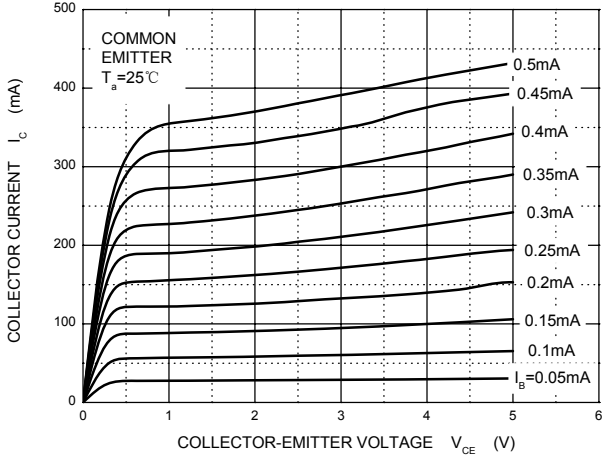
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =100μA, I _E =0	50			V
Collector-emitter breakdown voltage (note 2)	V _{(BR)CEO}	I _C =10mA, I _B =0	50			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =100μA, I _C =0	5			V
Collector cut-off current	I _{CBO}	V _{CB} =40V, I _E =0			100	nA
Emitter cut-off current	I _{EBO}	V _{EB} =4V, I _C =0			100	nA
DC current gain (note 2)	h _{FE(1)}	V _{CE} =2V, I _C =10mA	200			
	h _{FE(2)}	V _{CE} =2V, I _C =0.2A	300			
	h _{FE(3)}	V _{CE} =2V, I _C =1A	200			
	h _{FE(4)}	V _{CE} =2V, I _C =2A	100			
	h _{FE(5)}	V _{CE} =2V, I _C =6A		40		
Collector-emitter saturation voltage (note 2)	V _{CE(sat)1}	I _C =0.1A, I _B =10mA			20	mV
	V _{CE(sat)2}	I _C =1A, I _B =10mA			200	mV
	V _{CE(sat)3}	I _C =2A, I _B =F∞0mA			220	mV
Base-emitter saturation voltage (note 2)	V _{BE(sat)}	I _C =2A, I _B =50mA			1	V
Base-emitter on voltage (note 2)	V _{BE(on)}	I _C =2A, V _{CE} =2V			1	V
Output capacitance	C _{ob}	V _{CB} =10V, f=1MHz			20	pF
Turn-on time	t _(on)	V _{CC} =10V, I _C =1A, I _{B1} =-I _{B2} =10mA		170		ns
Turn-off time	t _(off)			750		ns
Transition frequency	f _T	V _{CE} =10V, I _C =50mA, f=100MHz	100			MHz

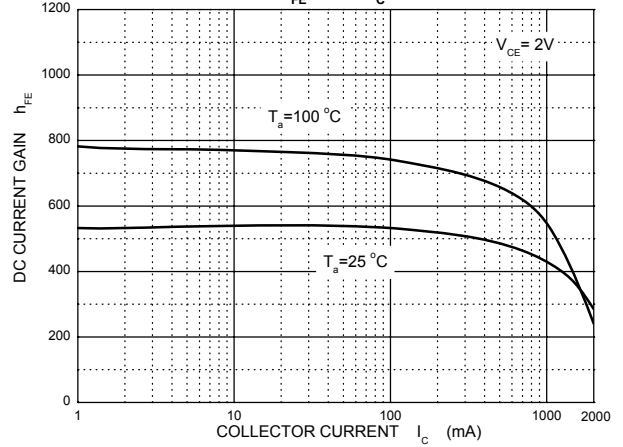
Notes :

- 1. Maximum power dissipation is calculated assuming that the device is mounted on a ceramic substrate measuring 15x15x0.6mm.
- 2. Pulse test: Pulse width≤300μs, duty cycle≤2.0%.

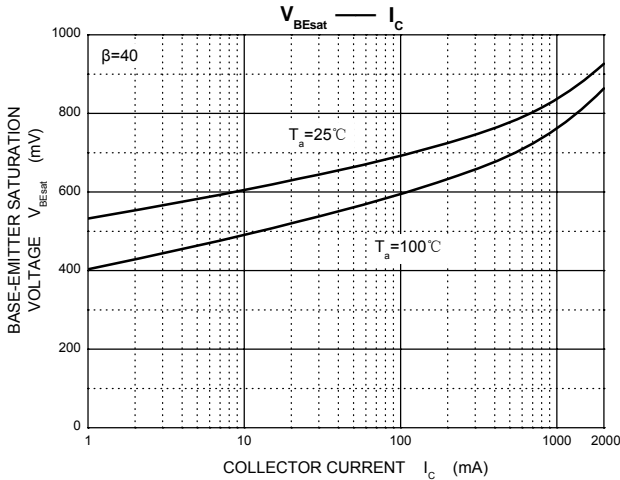
Static Characteristic



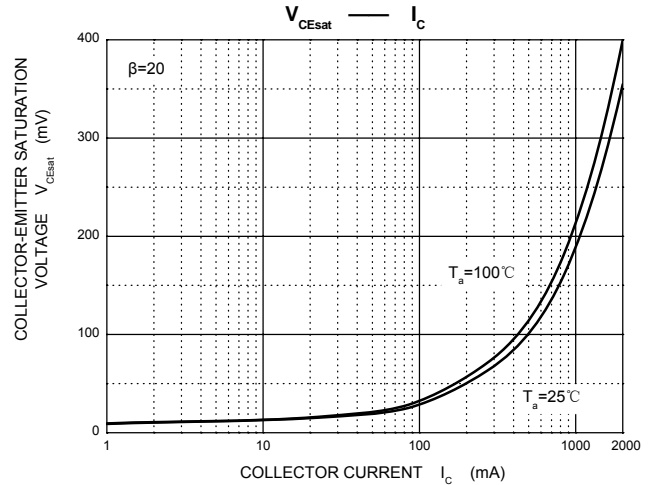
$h_{FE} - I_C$



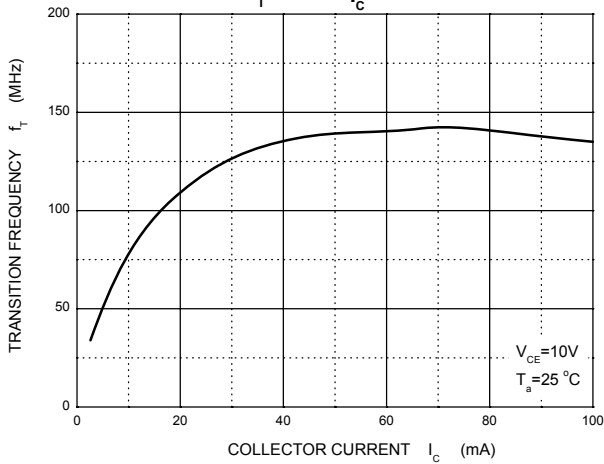
$V_{BEsat} - I_C$



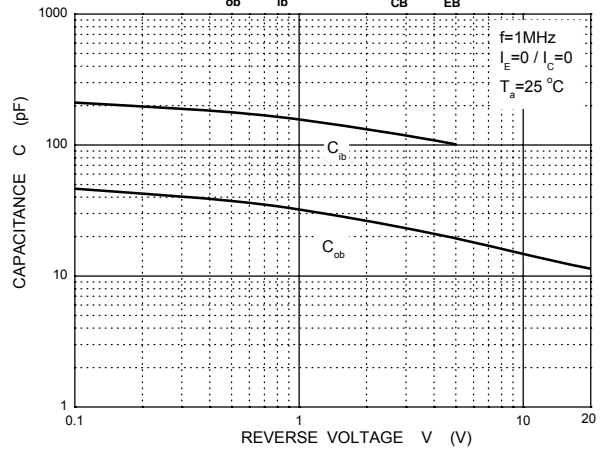
$V_{CEsat} - I_C$



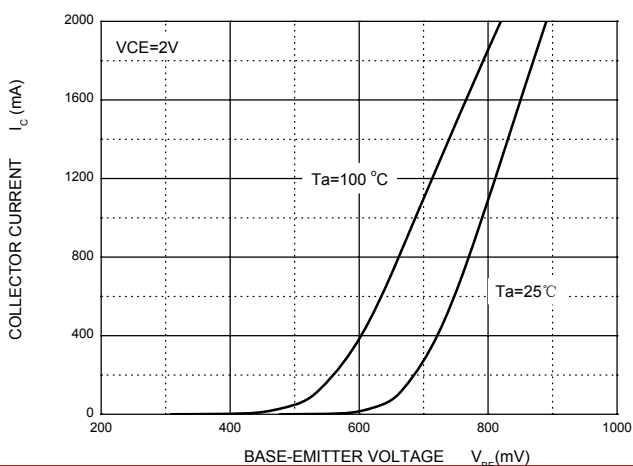
$f_T - I_C$



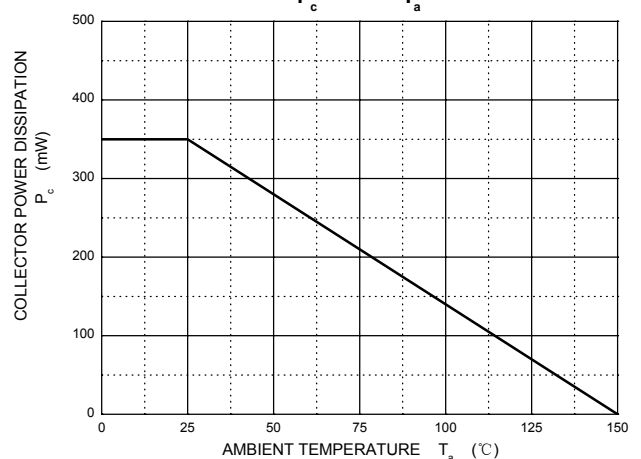
$C_{ob} / C_{ib} - V_{CB} / V_{EB}$



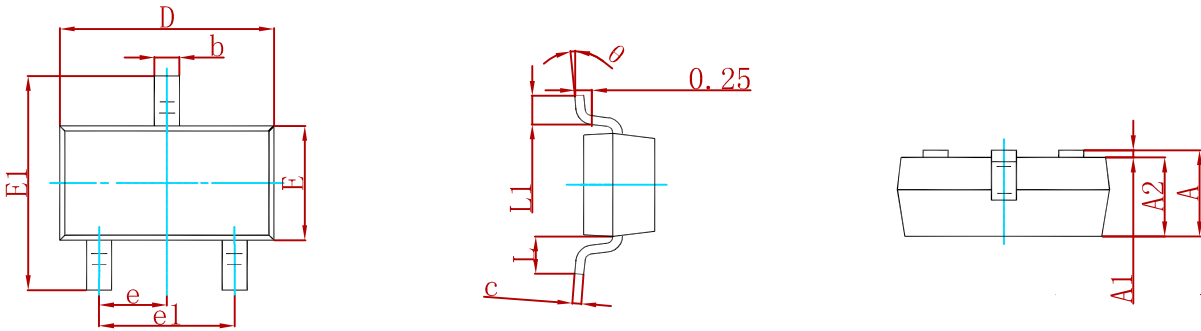
$V_{BE} - I_C$



$P_c - T_a$

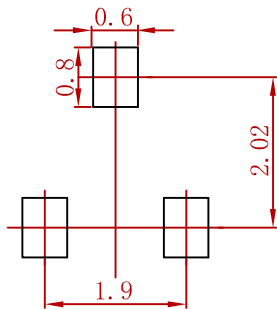


PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.05mm.
 3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
FMMT619	SOT-23	3000

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