

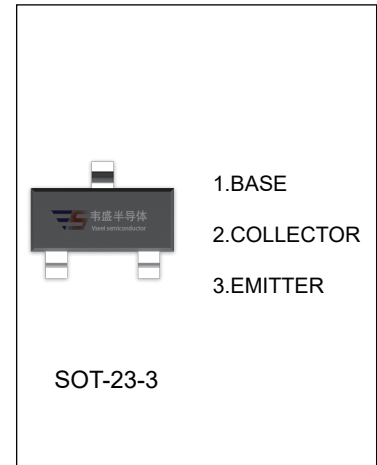
FMMT618 TRANSISTOR (NPN)

FEATURE

- Extremely low saturation voltage
- Complementary PNP type: FMMT718

APPLICATION

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



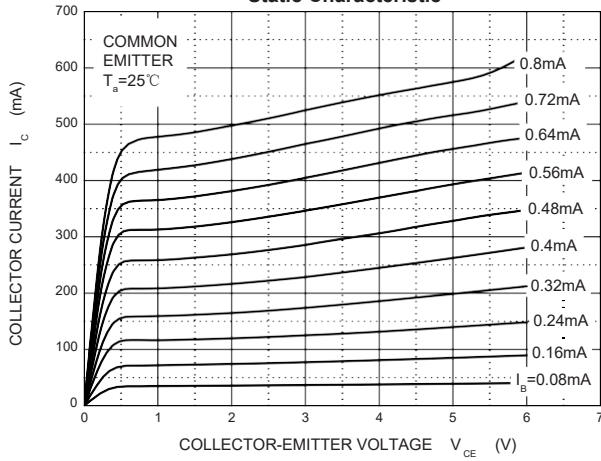
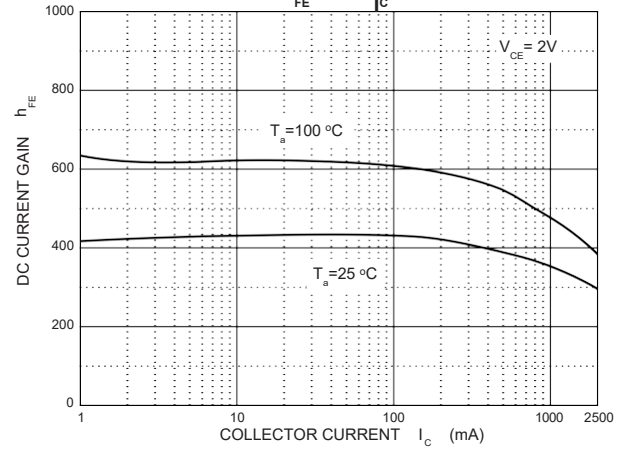
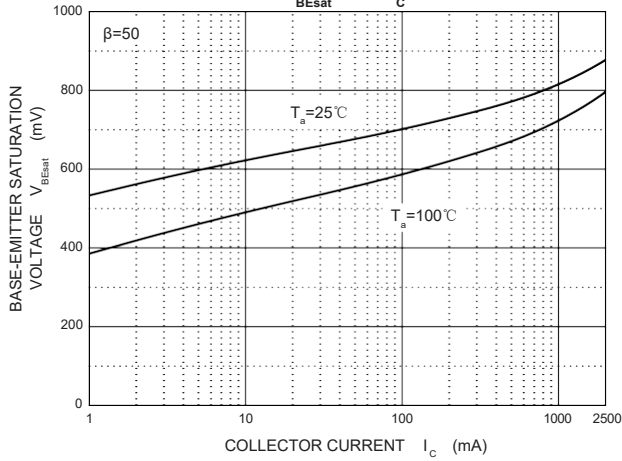
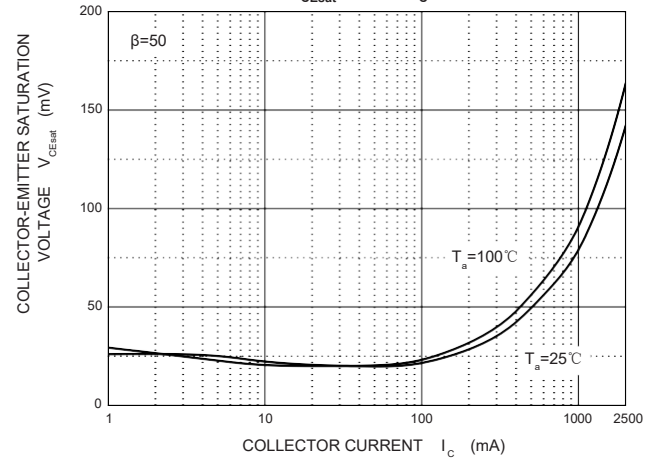
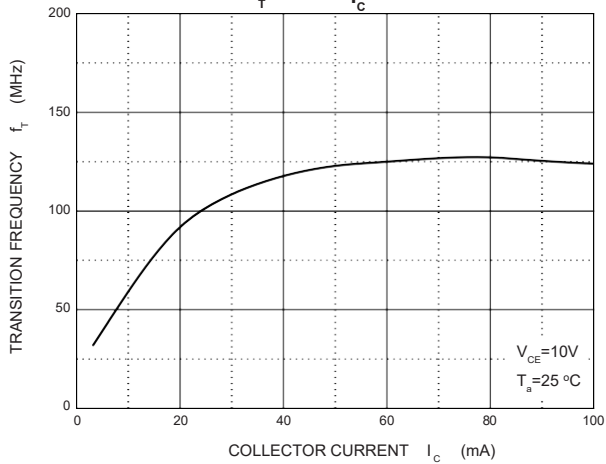
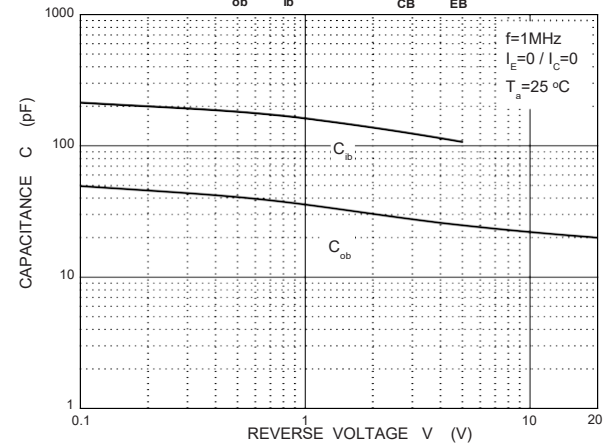
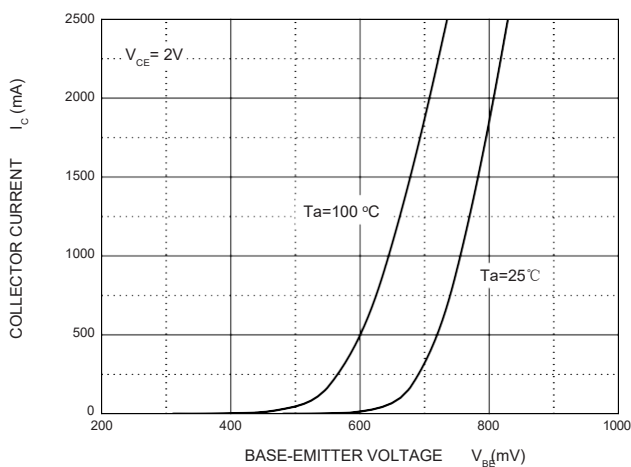
MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	20	V
V_{EBO}	Emitter-Base Voltage	5	V
I_B	Base Current	0.5	A
I_C	Collector Current -Continuous	2.5	A
P_C	Total Collector Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	357	$^{\circ}\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	20			V
Collector-emitter breakdown voltage (note 1)	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	20			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=16V, I_E=0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=4V, I_C=0$			100	nA
DC current gain (note 1)	$h_{FE(1)}$	$V_{CE}=2V, I_C=10mA$	200			
	$h_{FE(2)}$	$V_{CE}=2V, I_C=0.2A$	300			
	$h_{FE(3)}$	$V_{CE}=2V, I_C=2A$	200			
	$h_{FE(4)}$	$V_{CE}=2V, I_C=4A$	100			
Collector-emitter saturation voltage (note 1)	$V_{CE(sat)1}$	$I_C=0.1A, I_B=10mA$			15	mV
	$V_{CE(sat)2}$	$I_C=1A, I_B=10mA$			150	mV
	$V_{CE(sat)3}$	$I_C=2.5A, I_B=50mA$			200	mV
Base-emitter saturation voltage (note 1)	$V_{BE(sat)}$	$I_C=2.5A, I_B=50mA$			1	V
Base-emitter on voltage (note 1)	$V_{BE(on)}$	$I_C=2.5A, V_{CE}=2V$			1	V
Output capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$			30	pF
Turn-on time	$t_{(on)}$	$V_{CC}=10V, I_C=1A, I_{B1}=-I_{B2}=10mA$		170		ns
Turn-off time	$t_{(off)}$			400		ns
Transition frequency	f_T	$V_{CE}=10V, I_C=50mA, f=100MHz$	100			MHz

Notes :

1. Pulse test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2.0\%$.

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
