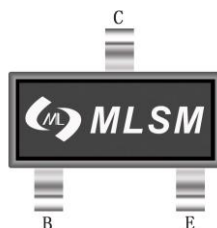


Features

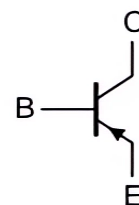
- Switching transistor
- Extremely low saturation voltage
- Complementary NPN type: FMMT619

Application

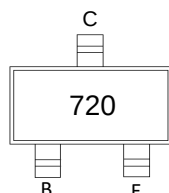
- Gate Driving MOSFETs and IGBTs
- DC-DC converters
- Charging circuit
- Power switches



SOT-23 top view



Schematic diagram



Marking and pin assignment



Halogen-Free

Maximum Ratings (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-1.5	A
I_B	Base Current	-0.5	A
I_{CM}	Peak Pulse Current	-4	A
P_C	Collector Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	357	°C/W
T_J, T_{STG}	Operating and Storage Temperature Range	-55~ +150	°C

Ordering Information (Example)

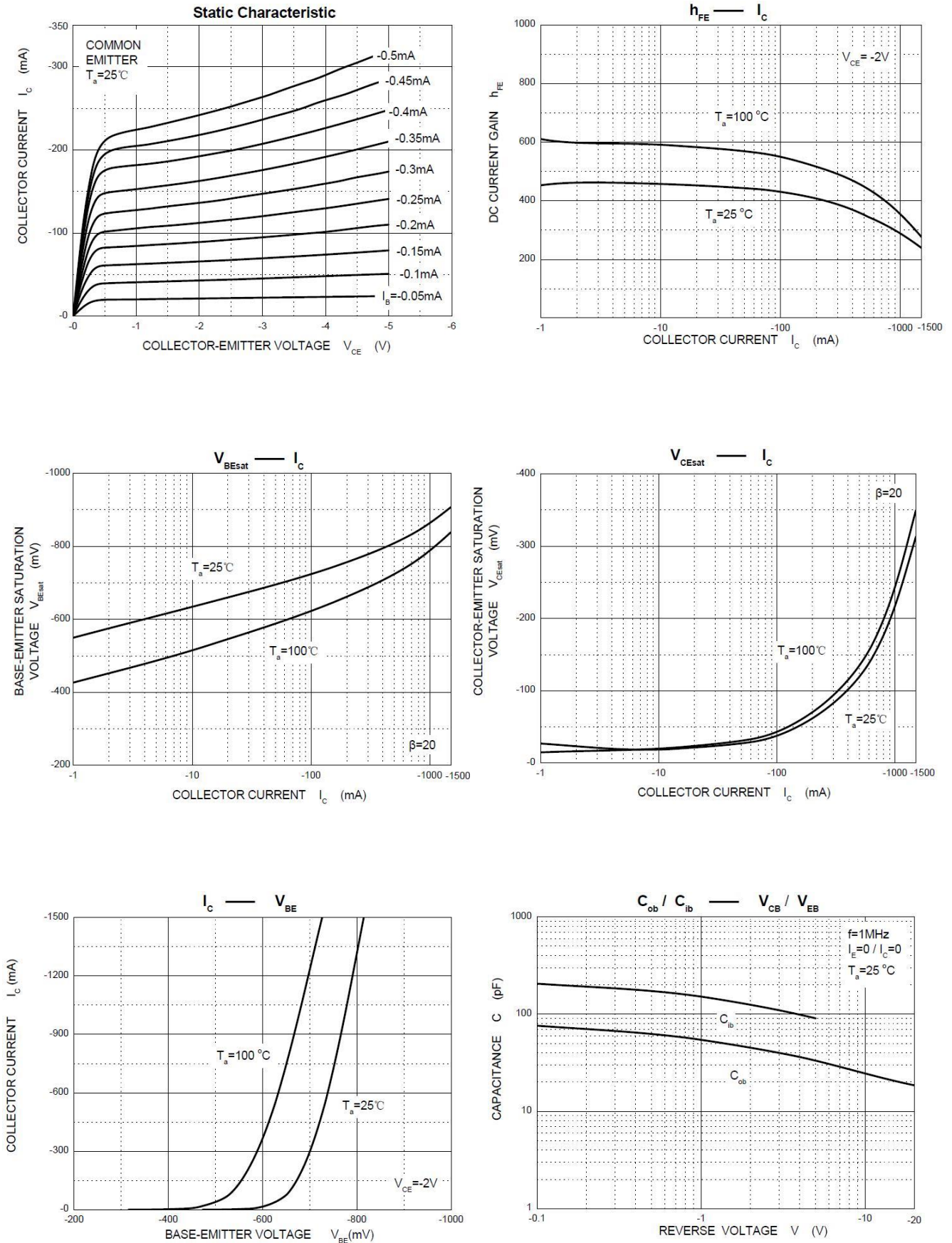
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
FMMT720	SOT-23	720	3,000	45,000	180,000	7"reel

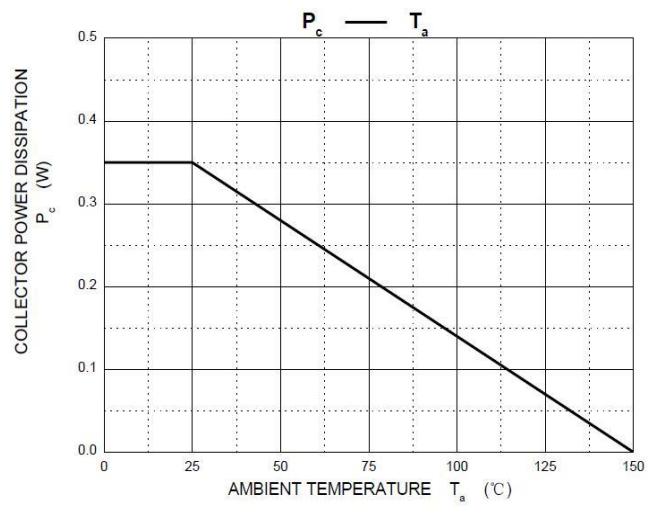
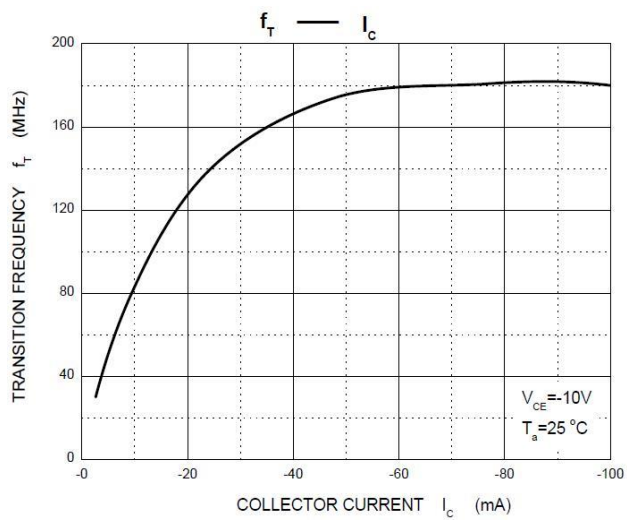
Electrical Characteristics (Ta=25°C unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C = -100\mu A, I_E = 0$	-40	--	--	V
$V_{(BR)CEO}^*$	Collector-emitter breakdown voltage	$I_C = -10mA, I_B = 0$	-40	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E = -100\mu A, I_C = 0$	-5	--	--	V
I_{CBO}	Collector cut-off current	$V_{CB} = -35V, I_E = 0$	--	--	-0.1	μA
I_{EBO}	Emitter cut-off current	$V_{EB} = -4V, I_C = 0$	--	--	-0.1	μA
I_{CES}	Collector cut-off current	$V_{CES} = -35V, I_E = 0$	--	--	-0.1	μA
h_{FE1}^*	DC current gain	$V_{CE} = -2V, I_C = -10mA$	300	--	--	
h_{FE2}^*		$V_{CE} = -2V, I_C = -100mA$	300	--	--	
h_{FE3}^*		$V_{CE} = -2V, I_C = -1A$	180	--	--	
h_{FE4}^*		$V_{CE} = -2V, I_C = -1.5A$	60	--	--	
h_{FE5}^*		$V_{CE} = -2V, I_C = -3A$	12			
$V_{CE(sat)1}^*$	Collector-emitter saturation voltage	$I_C = -0.1A, I_B = -10mA$	--	--	-40	mV
$V_{CE(sat)2}^*$		$I_C = -1A, I_B = -50mA$	--	--	-220	mV
$V_{CE(sat)3}^*$		$I_C = -1.5A, I_B = -100mA$	--	--	-330	mV
$V_{BE(sat)}^*$	Base-emitter saturation voltage	$I_C = -1.5A, I_B = -75mA$	--	--	-1	V
$V_{BE(on)}^*$	Base-emitter voltage	$V_{CE} = -2V, I_C = -1.5A$	--	--	-1	V
f_T	Transition frequency	$V_{CE} = -10V, I_C = -50mA, f = 100MHz$	150	--	--	MHz
C_{ob}	Collector output capacitance	$V_{CB} = -10V, f = 1MHz$	--	--	25	pF
$t_{(on)}$	Turn-on Time	$V_{CC} = -15V, I_C = -0.75A, I_{B1} = I_{B2} = -15mA$	--	40	--	ns
$t_{(off)}$	Turn-off Time		--	435	--	ns

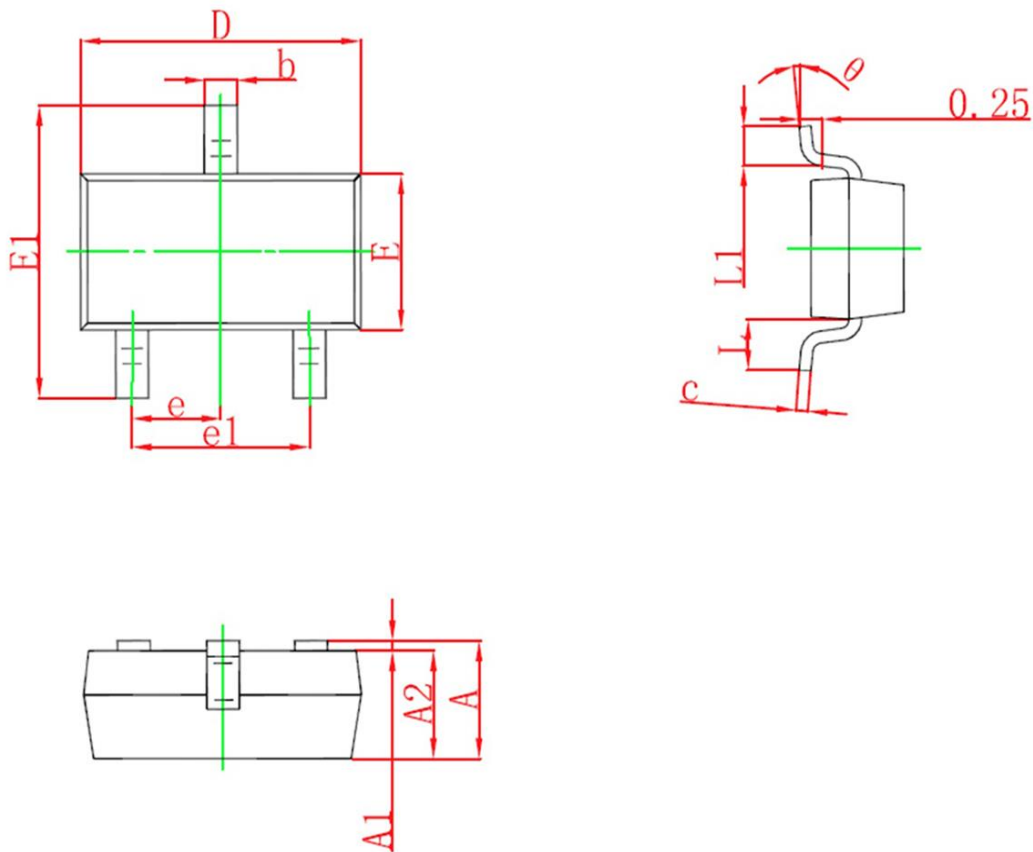
*Measured under pulse conditions . Pulse width =300 μ s. Duty cycle $\leq$ 2%.

Typical Operating Characteristics





SOT-23 Package information



Symbol	Dimensions in Millimeters(mm)		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
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
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°