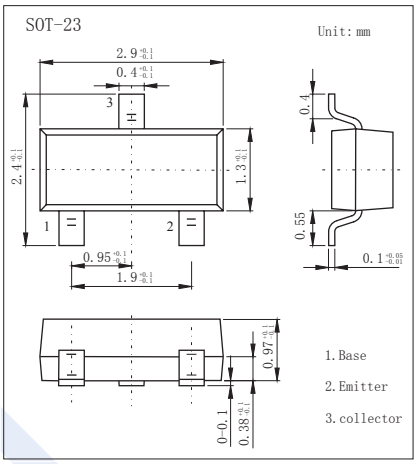
NPN Transistors

FMMT625 (KMMT625)



■ Features

- 3 A Peak Pulse Current
- Excellent H_{FE} Characteristics Up To 3 A (pulsed)
- Extremely Low Saturation Voltage E.g. 8mV Typ.
- Extremely Low Equivalent On Resistance; $R_{CE(sat)}$

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	150	V
Collector - Emitter Voltage	V_{CEO}	150	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	1	A
Collector Current - Pulse (Note.1)	I_{CP}	3	
Base Current	I_B	500	mA
Power Dissipation	P_D	625	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: Pulse width=300ms. Duty cycle ⩽ 2%

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA, I_E= 0	150			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 10 mA, I_B= 0	150			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 130 V , I_E= 0			100	nA
Collector- emitter cut-off current	I_{CES}	V_{CE}= 130 V , I_E= 0			100	
Emitter cut-off current	I_{EBO}	V_{EB}= 4V , I_C=0			100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=100 mA, I_B=10mA (Note.1)			50	mV
		I_C=100 mA, I_B=1mA (Note.1)			200	
		I_C=1 A, I_B=50mA (Note.1)			300	
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C= 1 A, I_B= 50mA (Note.1)			1	V
Base-emitter turn-on voltage	$V_{BE(on)}$	V_{CE}= 10V, I_C= 1 A (Note.1)			1	
DC current gain	$h_{FE(1)}$	V_{CE}= 10V, I_C= 10mA	200			
	$h_{FE(2)}$	V_{CE}= 10V, I_C= 200mA	300			
	$h_{FE(3)}$	V_{CE}= 10V, I_C= 1 A	30			
	$h_{FE(4)}$	V_{CE}= 10V, I_C= 3 A		15		
Turn-On Time	t_{on}	V_{CC}=50V, I_C=0.5A I_{B1}=-I_{B2}=50mA		160		ns
Turn-Off Time	t_{off}			1500		
Collector output capacitance	C_{ob}	V_{CB}= 10V, f=1MHz			10	pF
Transition frequency	f_T	V_{CE}= 10V,I_C=50mA, f=100 MHz	100			MHz

Note.1: Pulse width = 300us; duty cycle <2%

■ Marking

Marking	625

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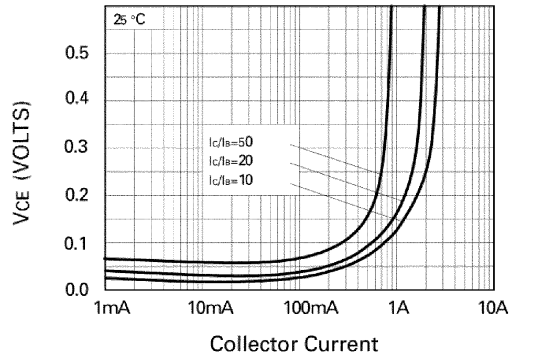
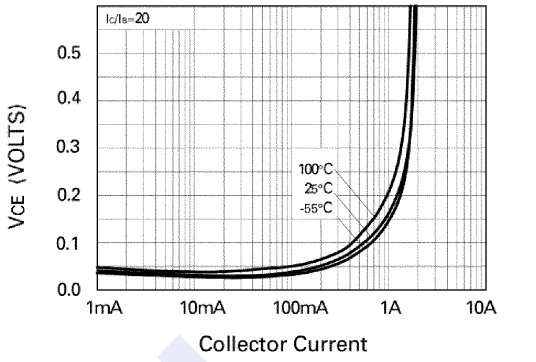
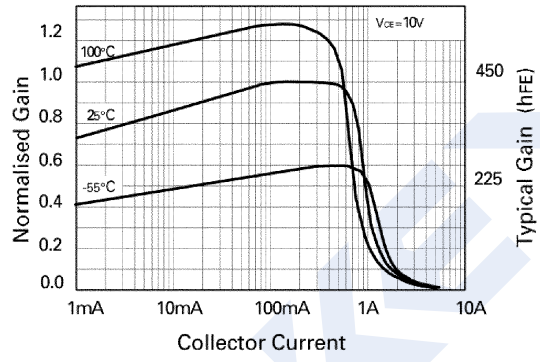
■ Typical Characterisitics



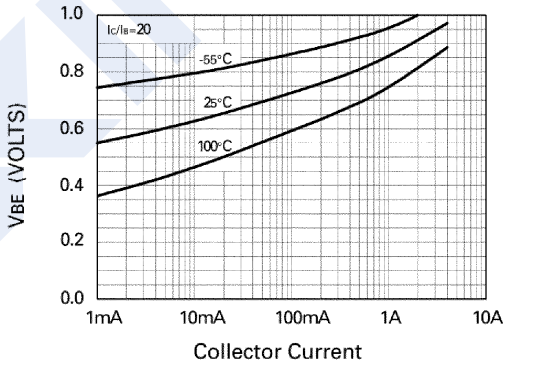
VCE(SAT) vs IC



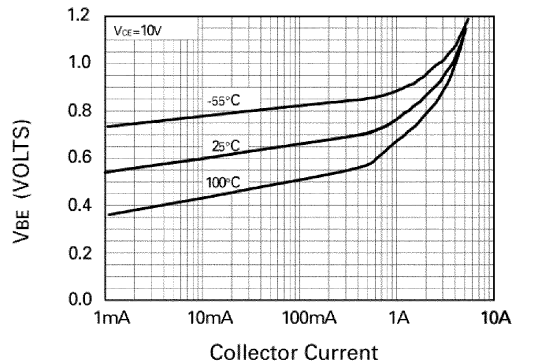
VCE(SAT) vs IC



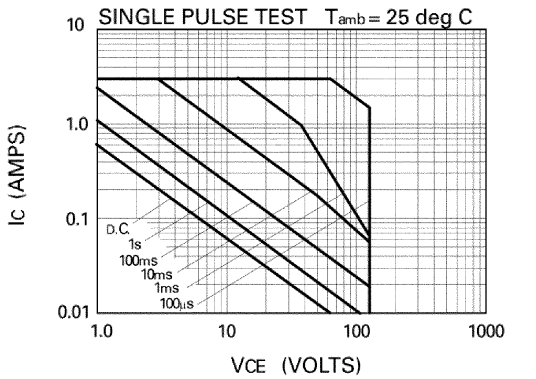
hFE vs IC



VBE(SAT) vs IC



VBE(ON) vs IC



Safe Operating Area

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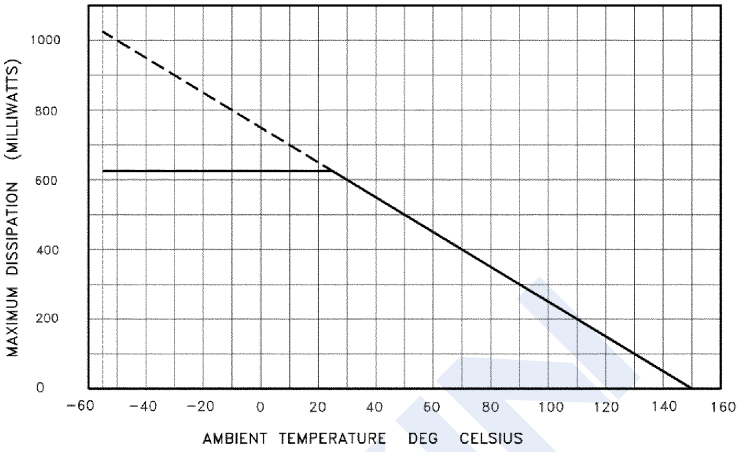
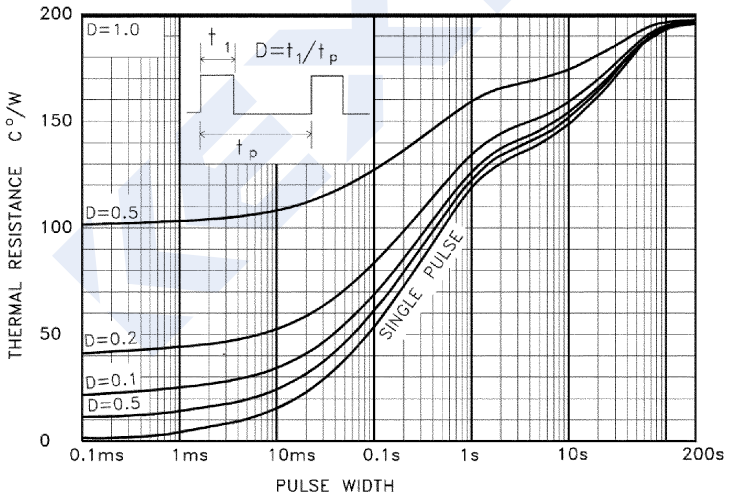
■ Typical Characterisitics



DERATING CURVE



MAXIMUM TRANSIENT THERMAL RESISTANCE

* Reference above figures, Devices were mounted on a 15mmx15mm ceramic substrate