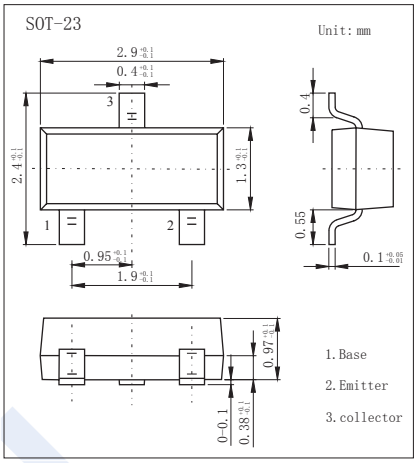
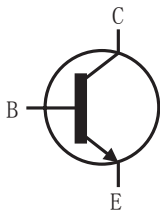
NPN Transistors

FMMT491 (KMMT491)



■ Features

- $V_{CE(sat)}$ maximum specification improvement
- Reverse blocking specification improvement



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	80	V
Collector - Emitter Voltage	V_{CEO}	60	
Emitter - Base Voltage	V_{EBO}	7	
Collector Current - Continuous	I_C	1	A
Collector Current - Pulse	I_{CP}	2	
Power Dissipation	P_D	500	mW
Linear derating factor		4	mW/℃
Junction to ambient	$R_{\theta JA}$	250	°C/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

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■ Electrical Characteristics Ta = 25℃

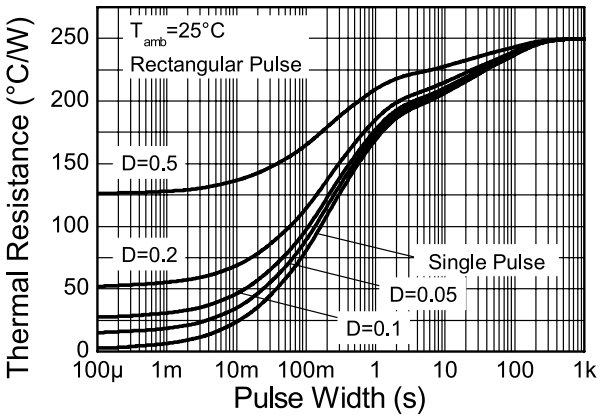
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA, I_E= 0	80			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 10 mA, I_B= 0	60			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μA, I_C= 0	7			
Collector-base cut-off current	I_{CBO}	V_{CB}= 60 V , I_E= 0			100	nA
Collector- emitter cut-off current	I_{CES}	V_{CE}= 60 V , I_E= 0			100	
Emitter cut-off current	I_{EBO}	V_{EB}= 5.6V , I_C=0			100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500 mA, I_B=50mA (Note.1)			150	mV
		I_C=1 A, I_B=100mA (Note.1)			250	
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C= 1 A, I_B= 100mA (Note.1)			1.1	V
Base-emitter turn-on voltage	$V_{BE(on)}$	V_{CE}= 5V, I_C= 1 A (Note.1)			1	
DC current gain	$h_{FE(1)}$	V_{CE}= 5V, I_C= 1mA	100			
	$h_{FE(2)}$	V_{CE}= 5V, I_C= 500mA	100		300	
	$h_{FE(3)}$	V_{CE}= 5V, I_C= 1 A	80			
	$h_{FE(4)}$	V_{CE}= 5V, I_C= 2 A	30			
Collector output capacitance	C_{ob}	V_{CB}= 10V, f=1MHz			10	pF
Transition frequency	f_T	V_{CE}= 10V,Ic=50mA, f=100 MHz	150			MHz

Note.1: Measured under pulsed conditions. Pulse width ≤ 300us; duty cycle ≤ 2%.

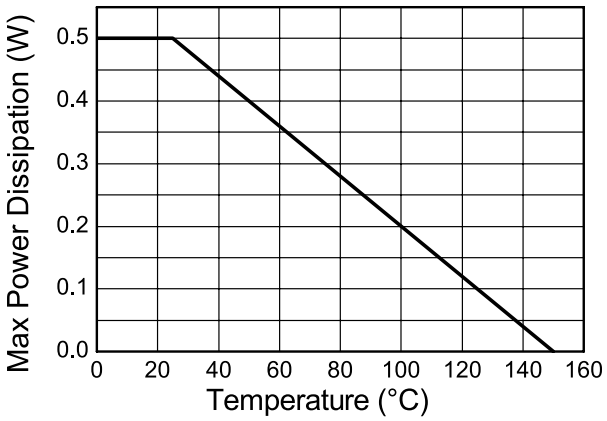
■ Marking

Marking	491

■ Typical Characterisitics



Transient Thermal Impedance



Derating Curve

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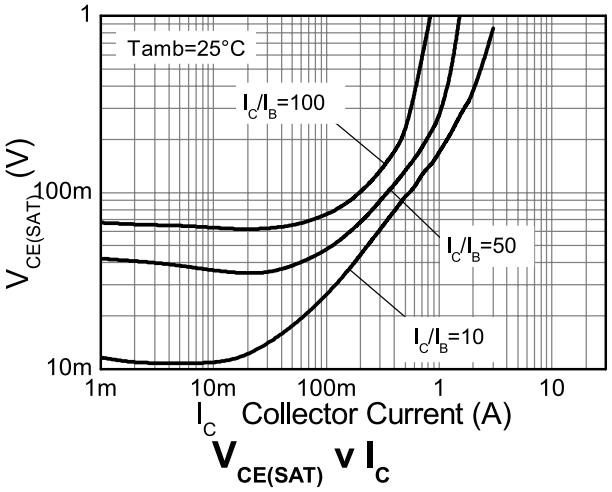
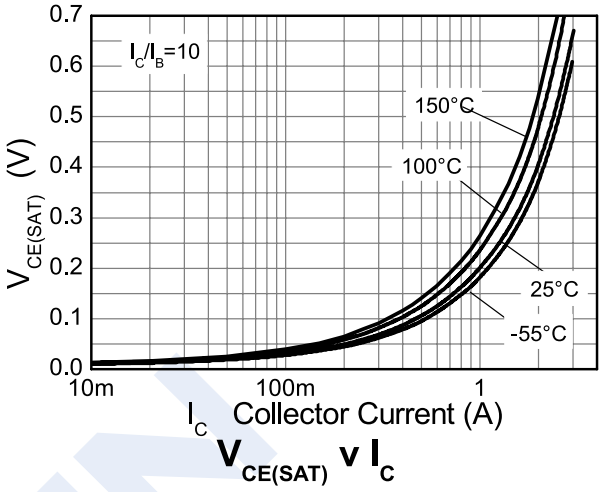
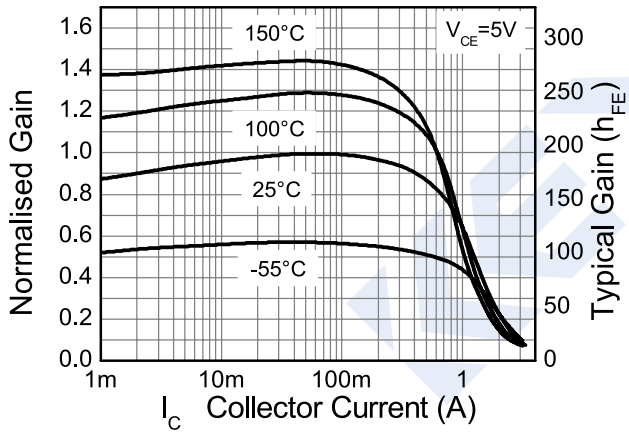
■ Typical Characterisitics



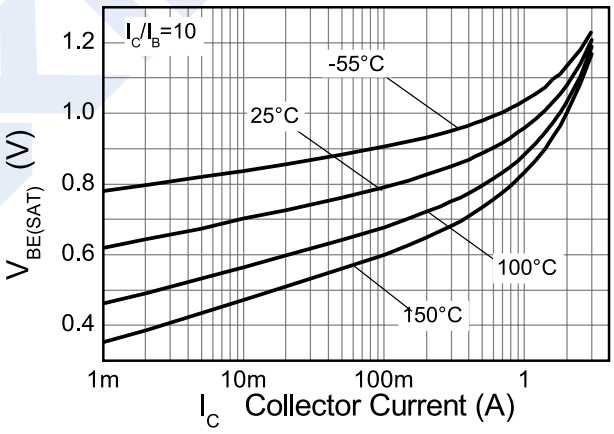
$V_{CE(SAT)}$ v I_C



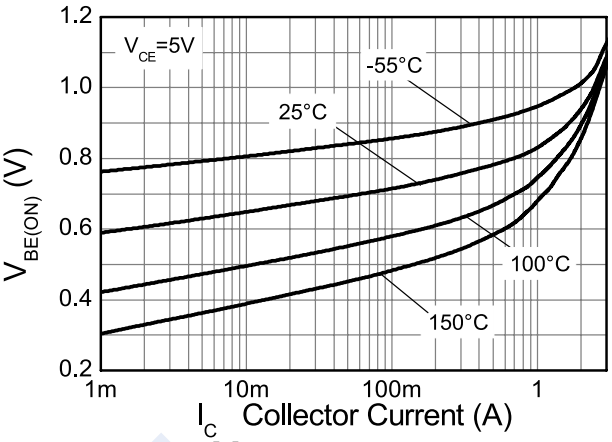
$V_{CE(SAT)}$ v I_C



h_{FE} v I_C



$V_{BE(SAT)}$ v I_C



$V_{BE(ON)}$ v I_C