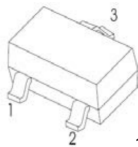
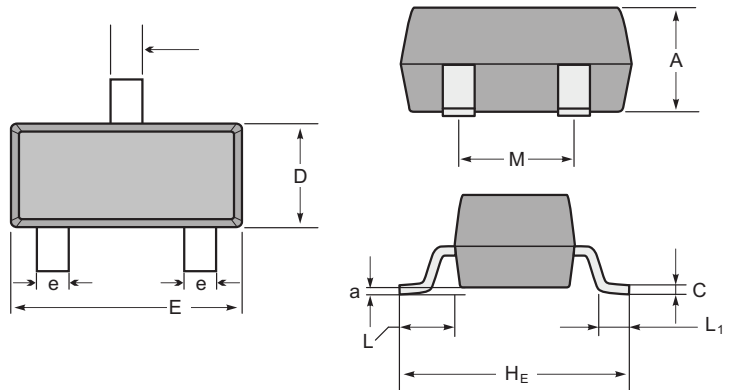


■ Features

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



1.BASE
2.EMITTER
3.COLLECTOR


SOT-23 mechanical data

UNIT		A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

■ Marking

Marking	491
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■ Absolute Maximum Ratings $T_a = 25^{\circ}\text{C}$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	80	V
Collector - Emitter Voltage	V_{CE0}	60	
Emitter - Base Voltage	V_{EB0}	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/ $^{\circ}\text{C}$
Junction to ambient	$R_{\theta JA}$	250	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

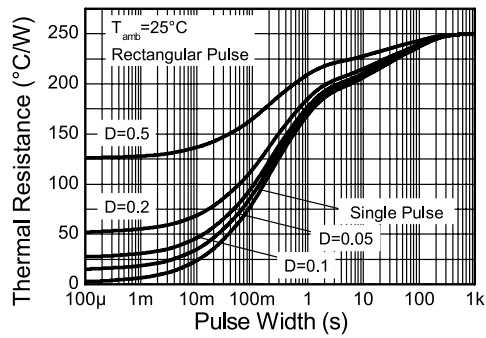
FMMT491

■ Electrical Characteristics Ta = 25°C

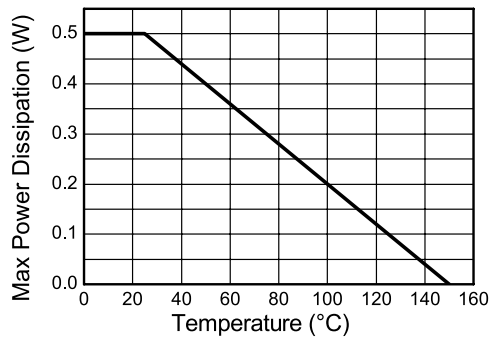
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V _{CBO}	I _C = 100 μA, I _E = 0	80			V
Collector- emitter breakdown voltage	V _{CEO}	I _C = 10 mA, I _B = 0	60			
Emitter - base breakdown voltage	V _{EBO}	I _E = 100 μA, I _C = 0	7			
Collector-base cut-off current	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, I _C =50mA, f=100 MHz	150			MHz

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

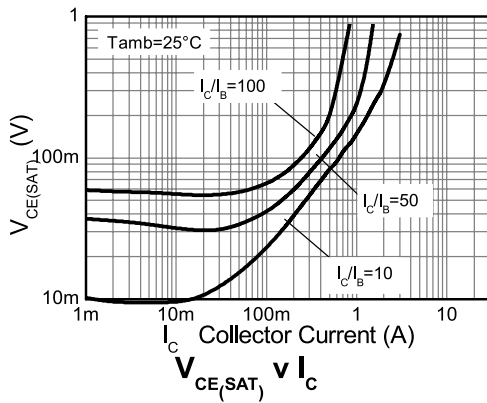
RATING AND CHARACTERISTIC CURVES (FMMT491)



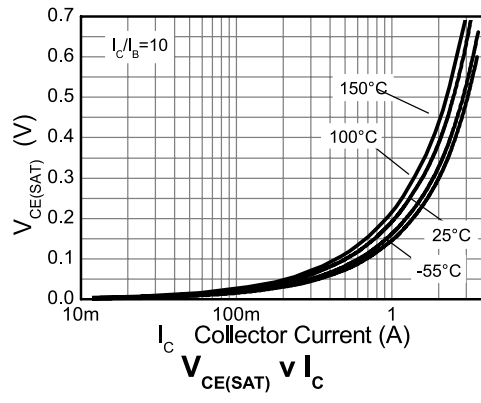
Transient Thermal Impedance



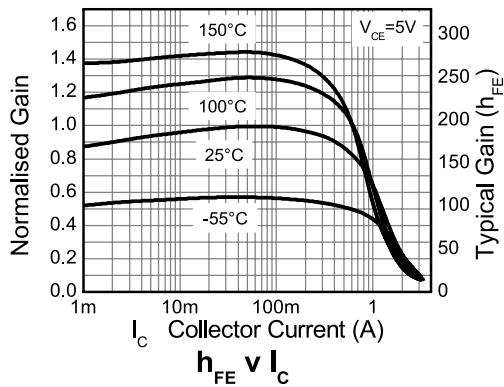
Derating Curve



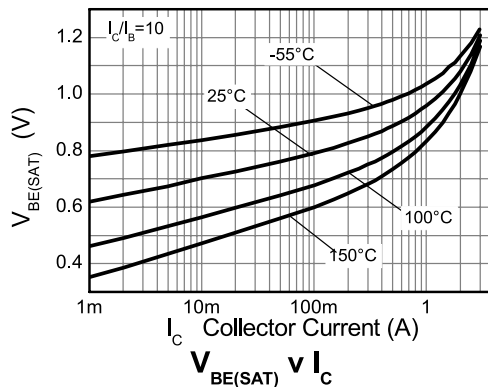
$V_{\text{CE(SAT)}} \propto I_{\text{C}}$



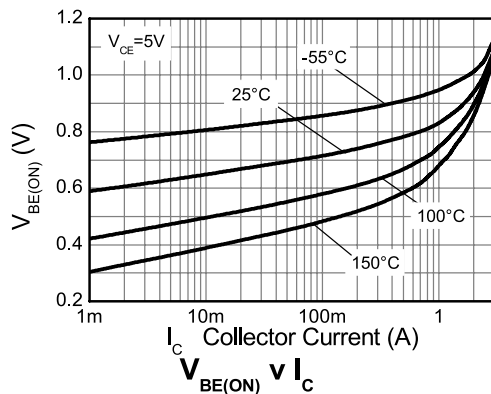
$V_{\text{CE(SAT)}} \propto I_{\text{C}}$



$h_{\text{FE}} \propto I_{\text{C}}$



$V_{\text{BE(SAT)}} \propto I_{\text{C}}$



$V_{\text{BE(ON)}} \propto I_{\text{C}}$