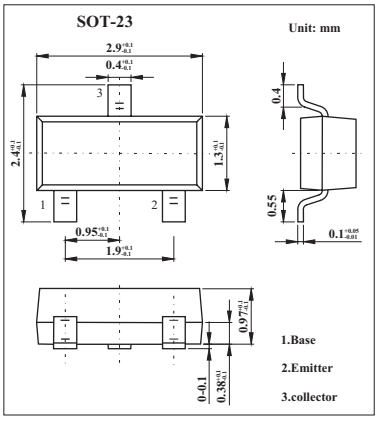
Silicon NPN High Voltage Switching Transistor

FMMT459



Features

- 6V reverse blocking capability
- Low saturation voltage - 90mV @ 50mA
- hFE ＞ 50 @ 30 Ma
- Ic=150mA continuous

Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	500	V
Collector-emitter voltage	V_{CEV}	500	V
Collector-emitter voltage	V_{CEO}	450	V
Emitter-base voltage	V_{EBO}	6	V
Emitter-collector voltage	V_{ECV}	6	V
Peak pulse current	I_{CM}	0.5	A
Continuous collector current * 1	I_C	0.15	A
Base current	I_B	0.2	A
Power dissipation @ T_A=25℃* 1	P_D	625	mW
Linear derating factor		5	mW/℃
Power dissipation @ T_A=25℃*2	P_D	806	mW
Linear derating factor		6.4	mW/℃
Operating and storage temperature range	T_j:T_{stg}	-55 to +150	℃
?Junction to ambient *1	$R_{\theta JA}$	200	℃/W
Junction to ambient *2	$R_{\theta JA}$	155	℃/W

*1 For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of 1oz copper, in still air conditions

*2 as above measured at t<5secs.

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	I_C=100μA	500	700		V
Collector-emitter breakdown voltage	BV_{CEV}	I_C=10μA,0.3V＞V_{BE}＞-1V	500	700		V
Collector-emitter breakdown voltage *	BV_{CEO}	I_C=10mA	450	500		V
Emitter-base breakdown voltage	BV_{EBO}	I_E=100μA	6	8.1		V
Emitter-base breakdown voltage	BV_{ECV}	I_C=1μA,0.3V＞V_{BC}＞-6V	6	8.1		V
Collector-emitter cut-off current	I_{CES}	V_{CE}=450V			100	nA
Collector-base cut-off current	I_{CBO}	V_{CB}=450V			100	nA
Emitter-base cut-off current	I_{EBO}	V_{EB}=5V			100	nA
Static forward current transfer ratio	h_{FE}	I_C=30mA,V_{CE}=10V	50	120		
		I_C=50mA,V_{CE}=10V *		70		
Collector-emitter saturation voltage *	$V_{CE(sat)}$	I_C=20mA,I_B=2mA		60	75	mV
		I_C=50mA,I_B=6mA		70	90	mV
Base-emitter saturation voltage *	$V_{BE(sat)}$	I_C=50mA,I_B=5mA		0.76	0.9	V
Base-emitter turn on voltage *	$V_{BE(on)}$	I_C=50mA,V_{CE}=10V		0.71	0.9	V
Transition frequency	f_T	I_C=10mA,V_{CE}=20V,f=20MHz	50			MHz
Output capacitance	C_{obo}	V_{CB}=20V, f=1MHz			5	pF
Turn-on time	ton	I_C=50mA, V_{CC}=100V		113		ns
Turn-off time	toff	I_{B1}=5mA, I_{B2}=10mA		3450		ns

* Measured under pulsed conditions. Pulse width = 300 μs; duty cycle ＜2%

■ Marking

Marking	459