



SOT - 23



- 1. BASE
- 2. EMITTER
- 3. COLLECTOR

FMMT491 TRANSISTOR (NPN)

FEATURES

Low equivalent on-resistance

Marking :491

MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

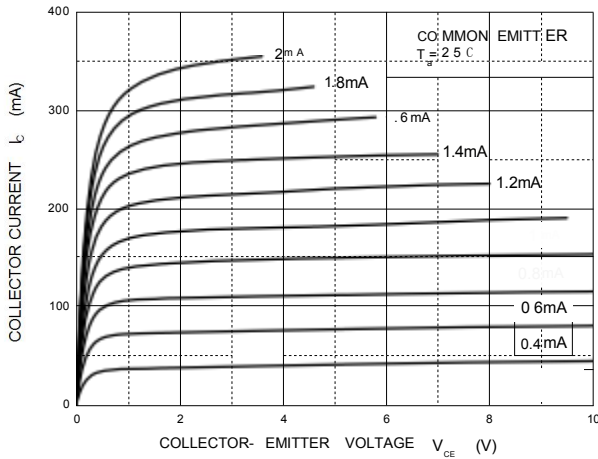
Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	80	V
V_{CE0}	Collector-Emitter Voltage	60	V
V_{EB0}	Emitter-Base Voltage	5	V
I_c	Collector Current -Continuous	1	A
P_c	Collector Power Dissipation	250	mW
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

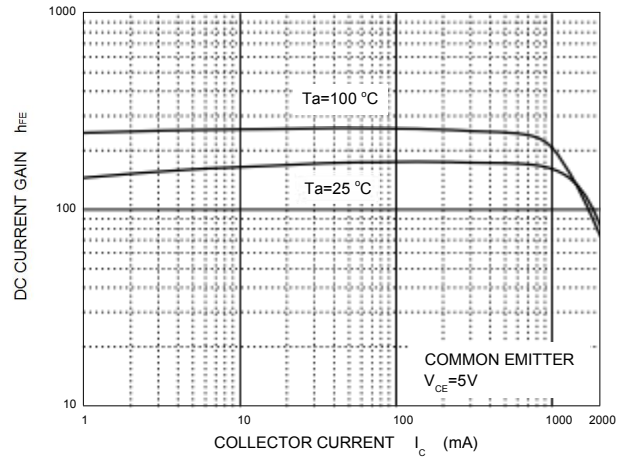
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CB0}$	$I_c=100\mu\text{A}, I_E=0$	80			V
Collector-emitter breakdown voltage	$V_{(BR)CE0}^1$	$I_c=10\text{mA}, I_B=0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EB0}$	$I_E=100\mu\text{A}, I_c=0$	5			V
Collector cut-off current	I_{CB0}	$V_{CB}=60\text{V}, I_E=0$			0.1	PA
Emitter cut-off current	I_{EB0}	$V_{EB}=4\text{V}, I_c=0$			0.1	PA
DC current gain	$h_{FE(1)}$	$V_{CE}=5\text{V}, I_c=1\text{mA}$	100			
	$h_{FE(2)}^1$	$V_{CE}=5\text{V}, I_c=500\text{mA}$	100		300	
	$h_{FE(3)}^1$	$V_{CE}=5\text{V}, I_c=1\text{A}$	80			
	$h_{FE(4)}^1$	$V_{CE}=5\text{V}, I_c=2\text{A}$	30			
Collector-emitter saturation voltage	$V_{CE(sat)1}^1$	$I_c=500\text{mA}, I_B=50\text{mA}$			0.25	V
	$V_{CE(sat)2}^1$	$I_c=1\text{A}, I_B=100\text{mA}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}^1$	$I_c=1\text{A}, I_B=100\text{mA}$			1.1	V
Base-emitter voltage	V_{BE}^1	$V_{CE}=5\text{V}, I_c=1\text{A}$			1	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_c=50\text{mA}, f=100\text{MHz}$	150			MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$			10	pF

¹Measured under pulsed conditions, Pulse width=300 μs , Duty cycle \leq 2%.

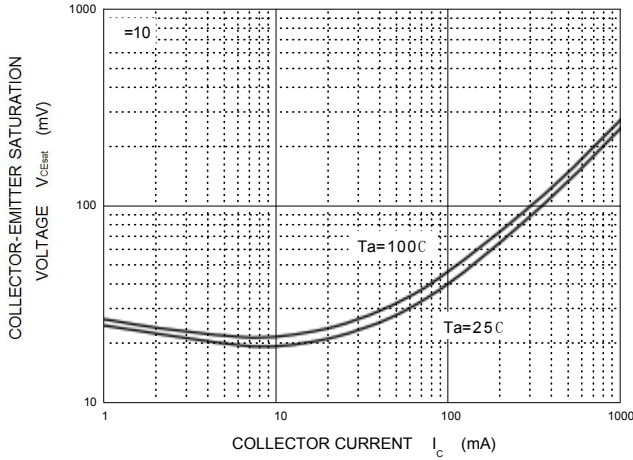
Static Characteristic



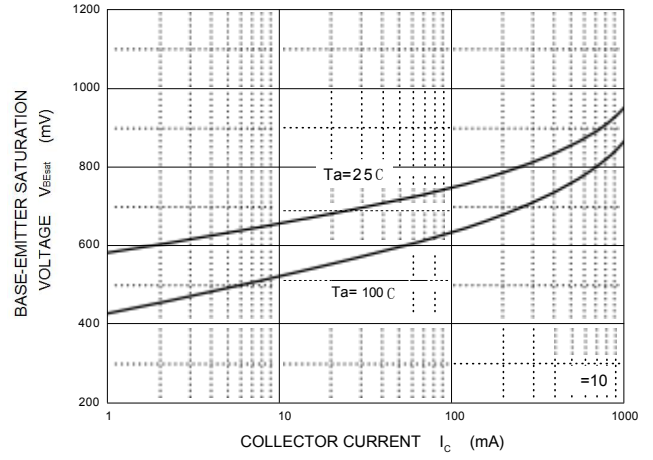
$h_{FE} - I_c$



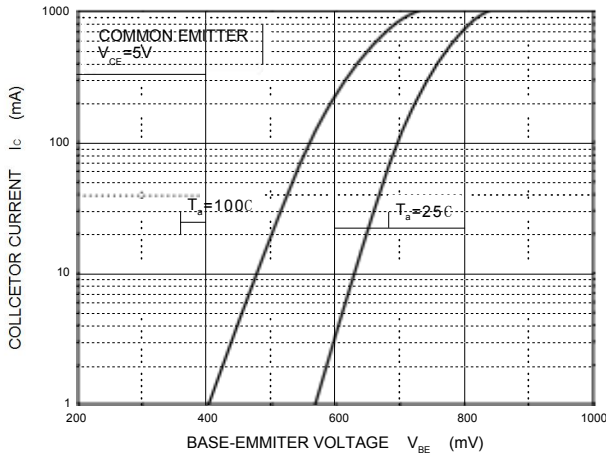
$V_{CEsat} - I_c$



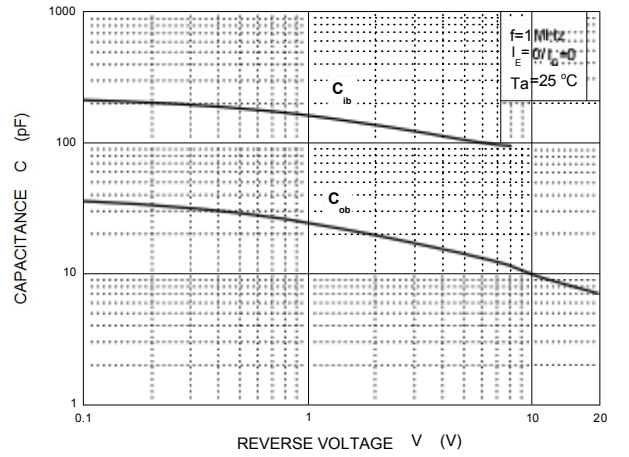
$V_{BEsat} - I_c$



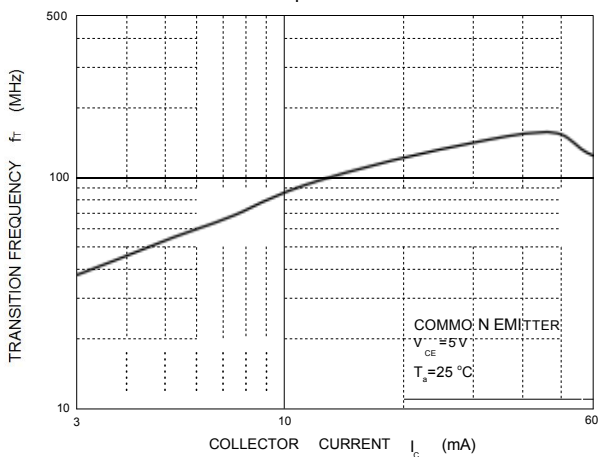
$I_c - V_{BE}$



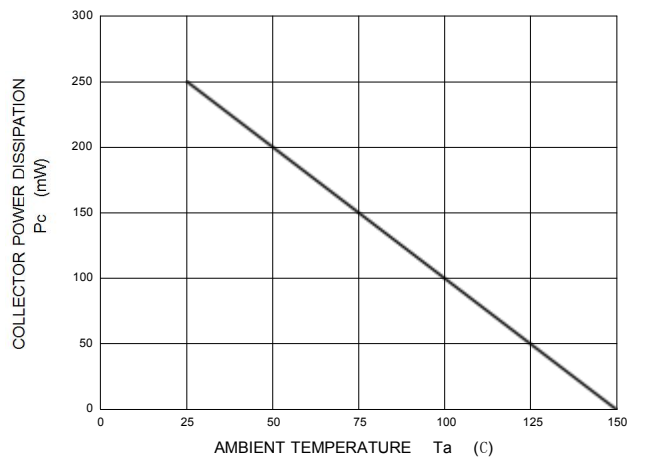
$C_{ob}/C_{ib} - V_{CB}/V_{EB}$



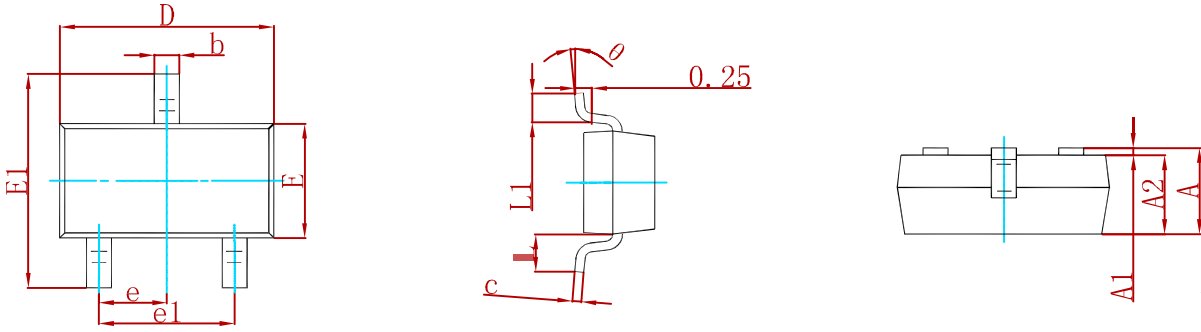
$f_T - I_c$



$P_c - T_a$

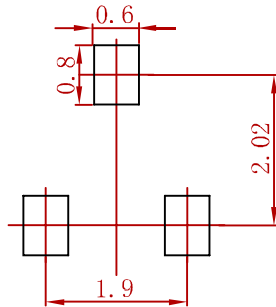


PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		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
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
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°

Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.05mm.
 3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
FMMT491	SOT-23	3000

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