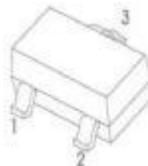




SOT - 23



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)

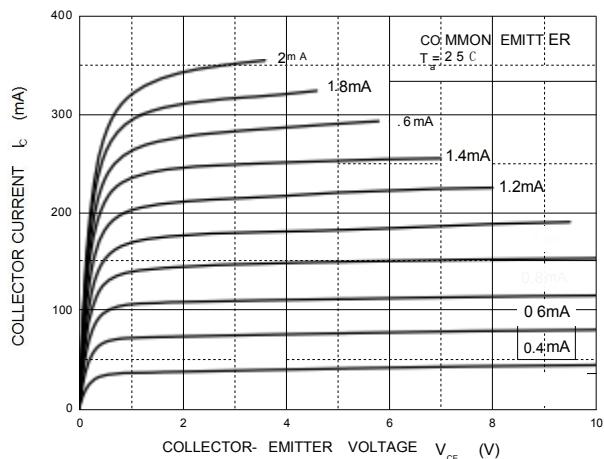
Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	80	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_c$	Collector Current -Continuous	1	A
$P_c$	Collector Power Dissipation	250	mW
$T_j$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55-150	°C

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

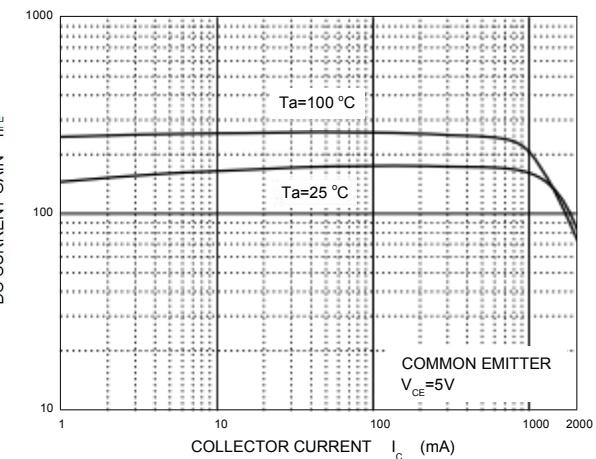
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_c=100\text{pA}, I_E=0$	80			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^1$	$I_c=10\text{mA}, I_B=0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\text{pA}, I_c=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=60\text{V}, I_E=0$			0.1	pA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4\text{V}, I_c=0$			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

<sup>1</sup>Measured under pulsed conditions, Pulse width=300  $\mu\text{s}$ , Duty cycle≤2%.

**Static Characteristic**

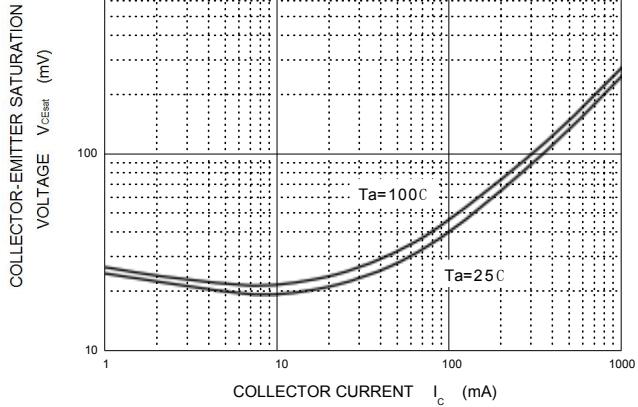


$h_{FE}$  —  $I_c$

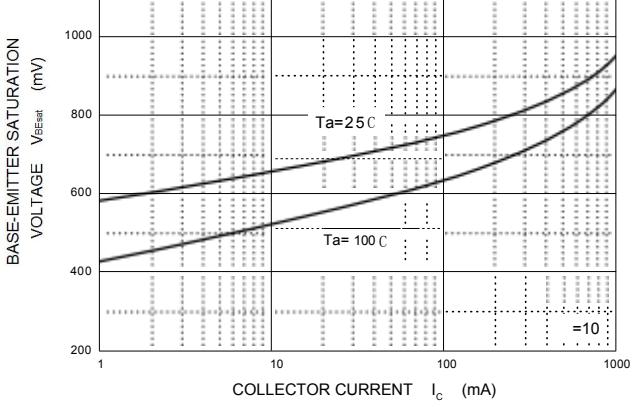


$V_{CEsat}$

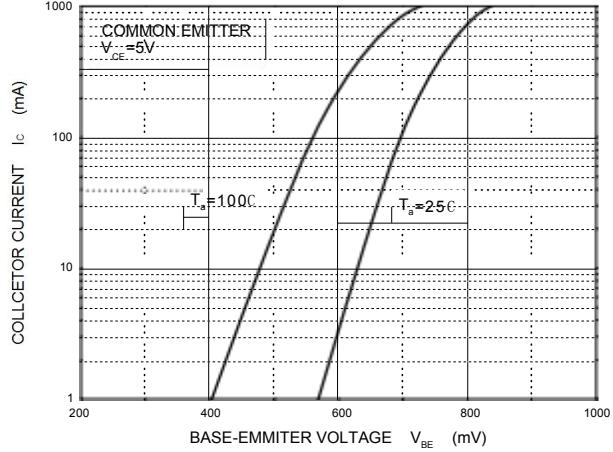
—  $I_c$



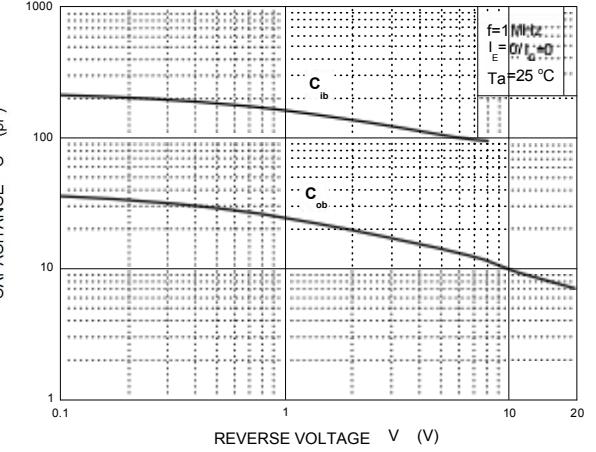
$V_{BEsat}$  —  $I_c$



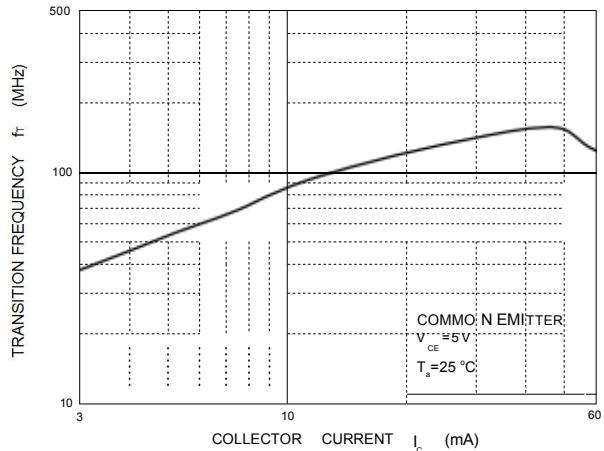
$I_c$  —  $V_{BE}$



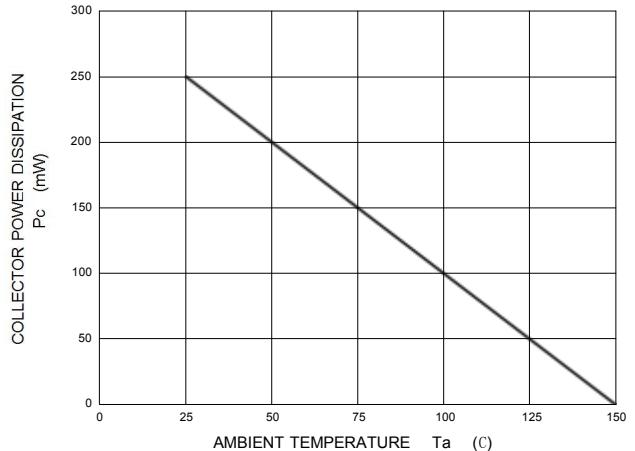
$C_{ob}/C_{ib}$  —  $V_{CB}/V_{EB}$

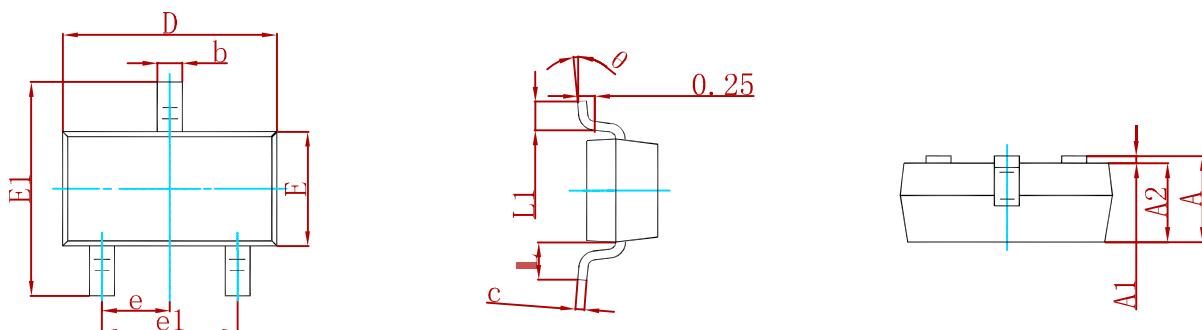


$f_T$  —  $I_c$

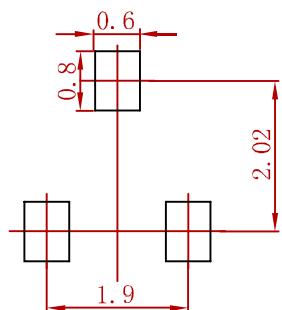


$P_c$  —  $T_a$



**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:  $\pm 0.05$ mm.
3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

P/N	PKG	QTY
FMMT491	SOT-23	3000

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