



YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

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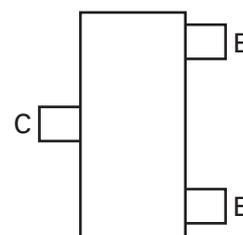
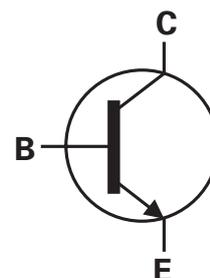
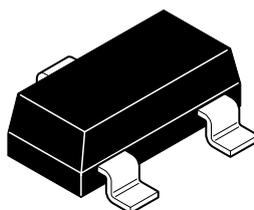
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Complementary part number -NK- FMMT597

Device marking - 497



Pinout - top view

Absolute maximum ratings

Parameter	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	300	V
Collector-emitter voltage	V_{CEO}	300	V
Emitter-base voltage	V_{EBO}	5	V
Continuous collector current	I_C	500	mA
Peak pulse current	I_{CM}	1	A
Base current	I_B	200	mA
Power dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	500	mW
Operating and storage temperature range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

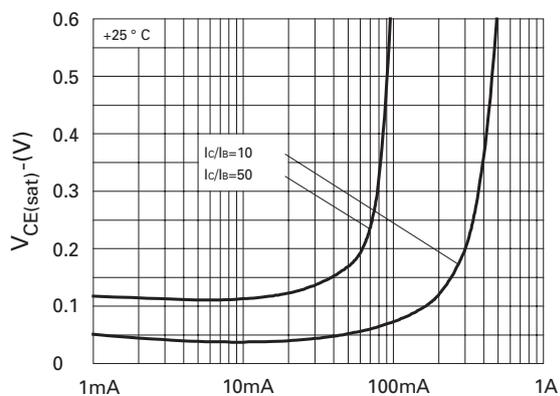
Electrical characteristics (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Symbol	Min.	Typ.	Max	Unit	Conditions
Collector-base breakdown voltage	$V_{(BR)CBO}$	300			V	$I_C = 100\mu\text{A}$
Collector-emitter breakdown voltage	$V_{CEO(sus)}$	300			V	$I_C = 10\text{mA}^{(*)}$
Emitter-base breakdown voltage	$V_{(BR)EBO}$	5			V	$I_E = 100\mu\text{A}$
Collector cut-off current	I_{CBO}			100	nA	$V_{CB} = 250\text{V}$
Collector cut-off current	I_{CES}			100	nA	$V_{CES} = 250\text{V}$
Emitter cut-off current	I_{EBO}			100	nA	$V_{EB} = 4\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$			0.2 0.3	V V	$I_C = 100\text{mA}, I_B = 10\text{mA}$ $I_C = 250\text{mA}, I_B = 25\text{mA}$
Base-emitter saturation voltage	$V_{BE(sat)}$			1.0	V	$I_C = 250\text{mA}, I_B = 25\text{mA}$
Base-emitter turn on voltage	$V_{BE(on)}$			1.0	V	$I_C = 250\text{mA}, V_{CE} = 10\text{V}$
Static forward current transfer ratio	h_{FE}	100 80 20		300		$I_C = 1\text{mA}, V_{CE} = 10\text{V}$ $I_C = 100\text{mA}, V_{CE} = 10\text{V}^{(*)}$ $I_C = 250\text{mA}, V_{CE} = 10\text{V}^{(*)}$
Transition frequency	f_T	75			MHz	$I_C = 50\text{mA}, V_{CE} = 10\text{V}$ $f = 100\text{MHz}$
output capacitance	C_{obo}			5	pF	$V_{CB} = 10\text{V}, f = 1\text{MHz}$
Switching performance	td		53		ns	$V_{CC} = 100\text{V}, I_C = 100\text{mA},$ $I_{b1} = -I_{b2} = 10\text{mA}$
	tr		126		ns	
	ts		2.58		μs	
	tf		228		ns	

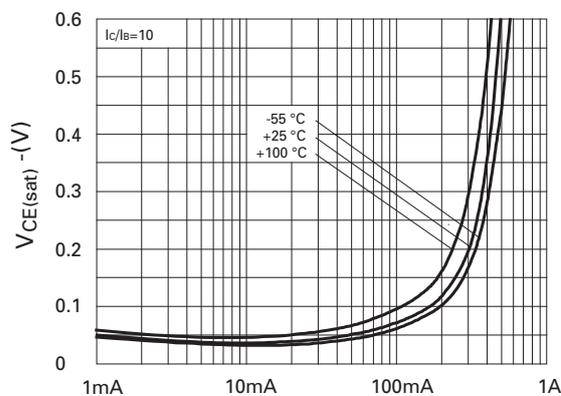
NOTES:

(*) Measured under pulsed conditions. Pulse width = $300\mu\text{s}$. Duty cycle $\leq 2\%$.

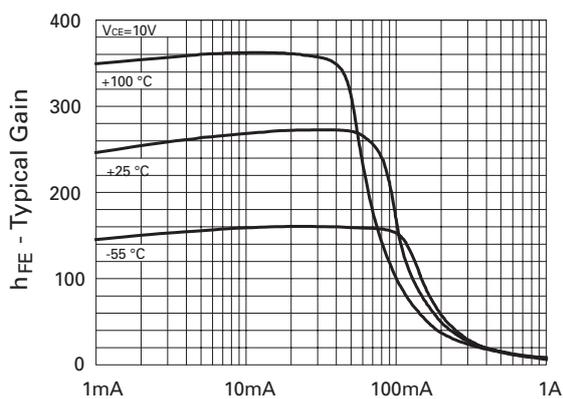
Typical characteristics



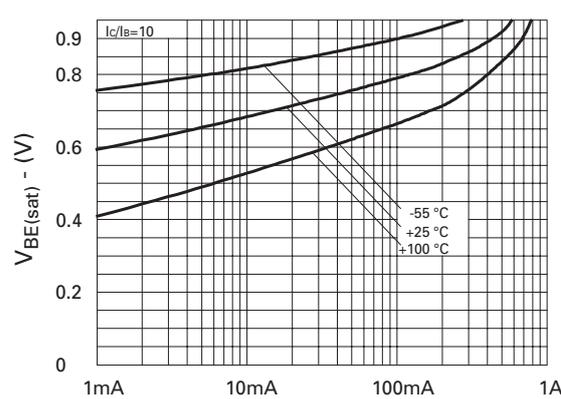
$V_{CE(sat)}$ v I_C



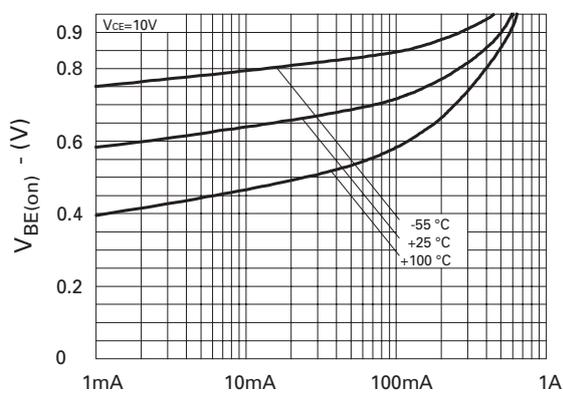
$V_{CE(sat)}$ v I_C



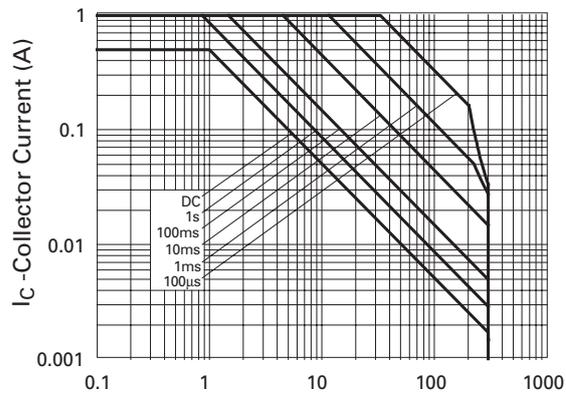
h_{FE} v I_C



$V_{BE(sat)}$ v I_C

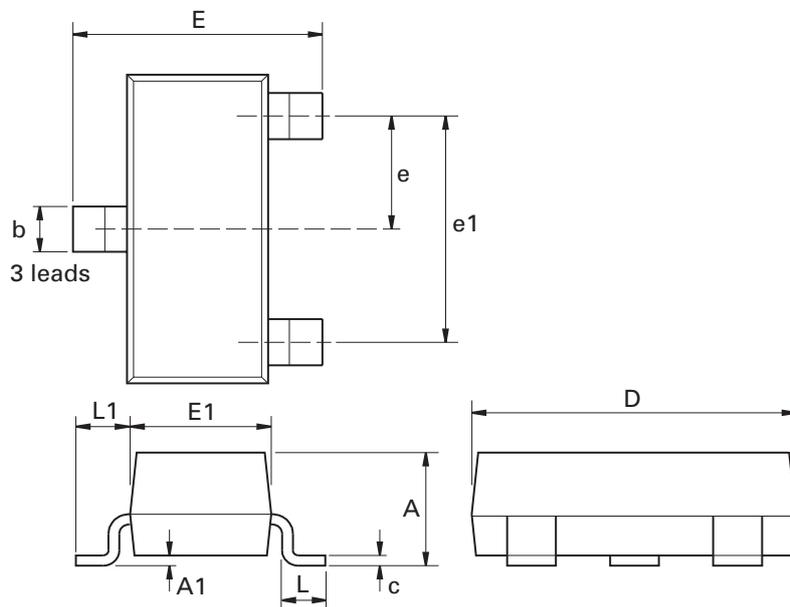


$V_{BE(on)}$ v I_C



Safe Operating Area

Package outline - SOT23



Dim.	Millimeters		Inches		Dim.	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Max.	Max.
A	-	1.12	-	0.044	e1	1.90 NOM		0.075 NOM	
A1	0.01	0.10	0.0004	0.004	E	2.10	2.64	0.083	0.104
b	0.30	0.50	0.012	0.020	E1	1.20	1.40	0.047	0.055
C	0.085	0.120	0.003	0.008	L	0.25	0.62	0.018	0.024
D	2.80	3.04	0.110	0.120	L1	0.45	0.62	0.018	0.024
e	0.95 NOM		0.0375 NOM		-	-	-	-	-

Note: Controlling dimensions are in millimeters. Approximate dimensions are provided in inches