

## FEATURES

- | Low equivalent on-resistance

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- | Power Dissipation of 250mW

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- | High Stability and High Reliability

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## MECHANICAL DATA

- | SOT-23 small outline plastic package

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- | Epoxy UL: 94V-0

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- | Mounting position: Any

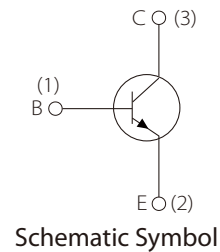
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## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003

## MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$	60	
Emitter-Base Voltage	$V_{EBO}$	5	
Collector Current-Continuous	$I_C$	1.0	A
Peak Pulse Current	$I_{CM}$	2.0	A
Collector Power Dissipation	$P_C$	250	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	500	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55~+150	$^{\circ}\text{C}$



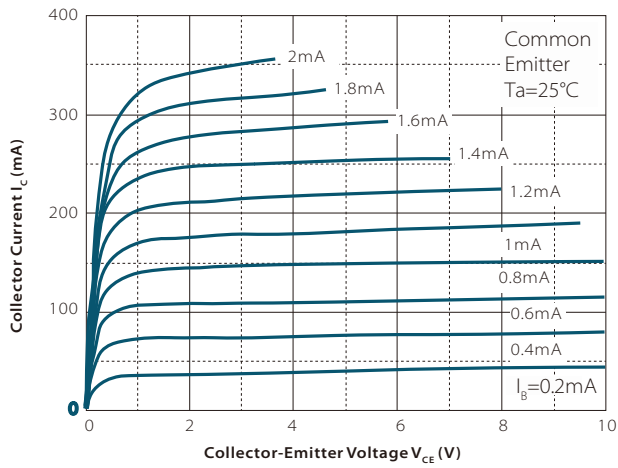
## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	80			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=10mA, I_B=0$	60			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	5			
Collector cut-off current	$I_{CBO}$	$V_{CB}=60V, I_E=0$			100	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			100	
DC current gain	$h_{FE(1)}$	$V_{CE}=5V, I_C=1mA$		100		
	$h_{FE(2)}^*$	$V_{CE}=5V, I_C=500mA$		100	300	
	$h_{FE(3)}^*$	$V_{CE}=5V, I_C=1000mA$		80		
	$h_{FE(4)}^*$	$V_{CE}=5V, I_C=2000mA$		30		
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=500mA, I_B=50mA$			0.25	V
		$I_C=1000mA, I_B=100mA$			0.50	
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C=1000mA, I_B=100mA$			1.10	
Base-emitter voltage	$V_{BE}^*$	$V_{CE}=5V, I_C=1000mA$			1.00	
Transition frequency	$f_T$	$V_{CE}=10V, I_C=50mA, f=100MHz$	150			MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, f=1MHz$			10	pF

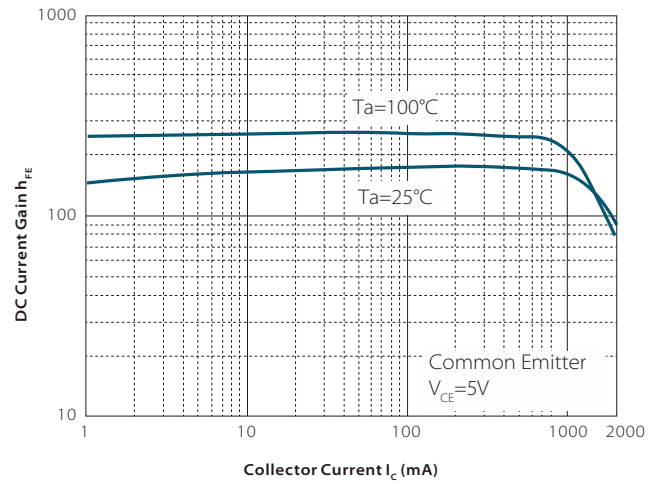
\* Measured under pulsed conditions, Pulse width=300us, Duty cycle≤2%

# TYPICAL CHARACTERISTICS

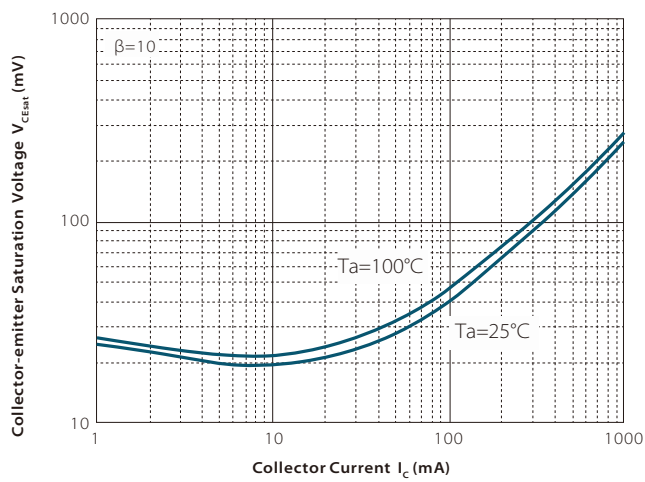
Static Characteristic



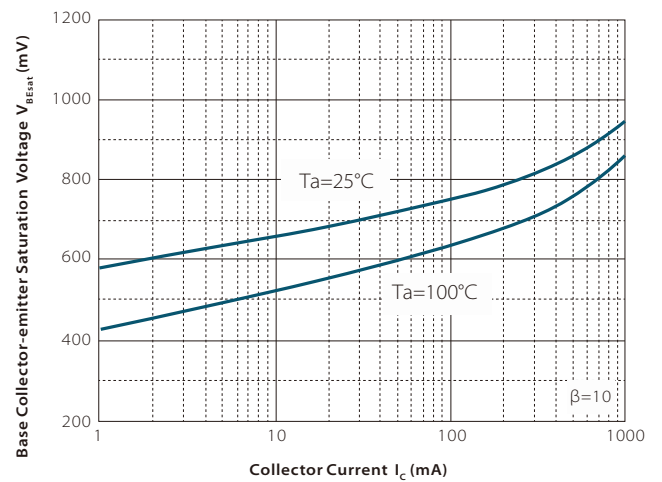
$h_{FE}$  —  $I_C$

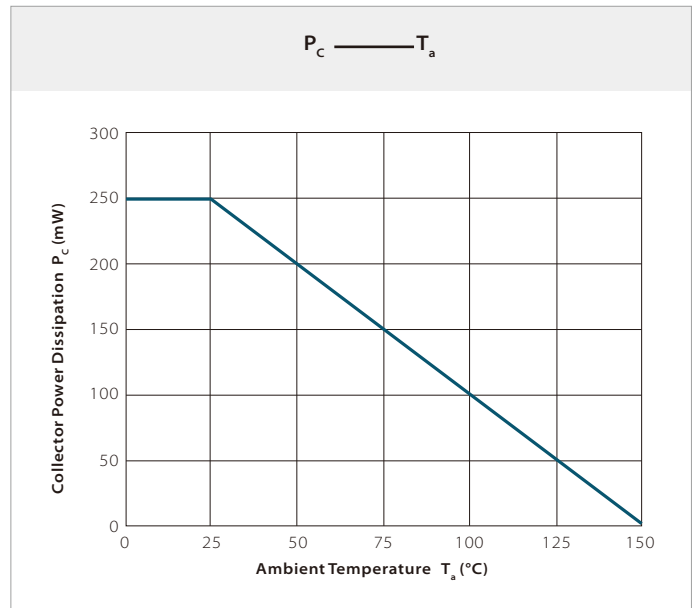
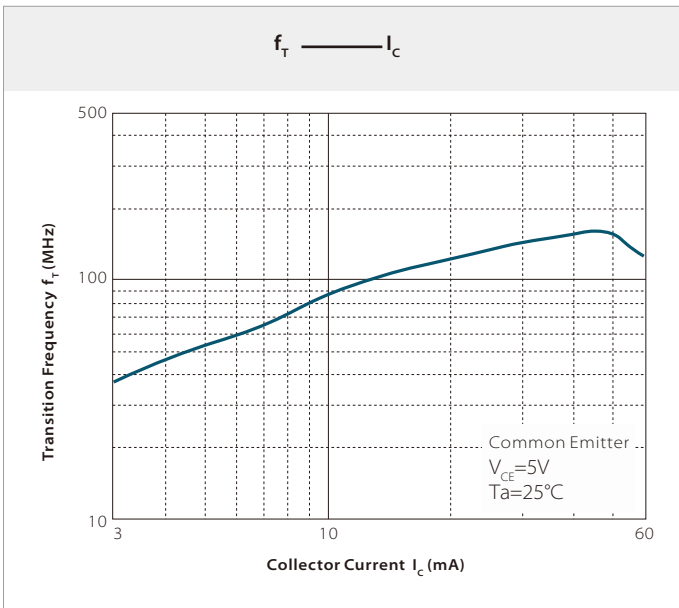
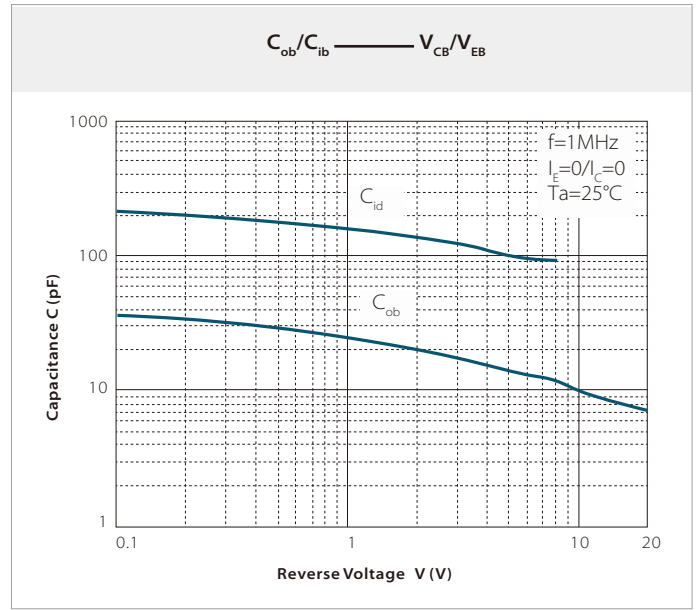
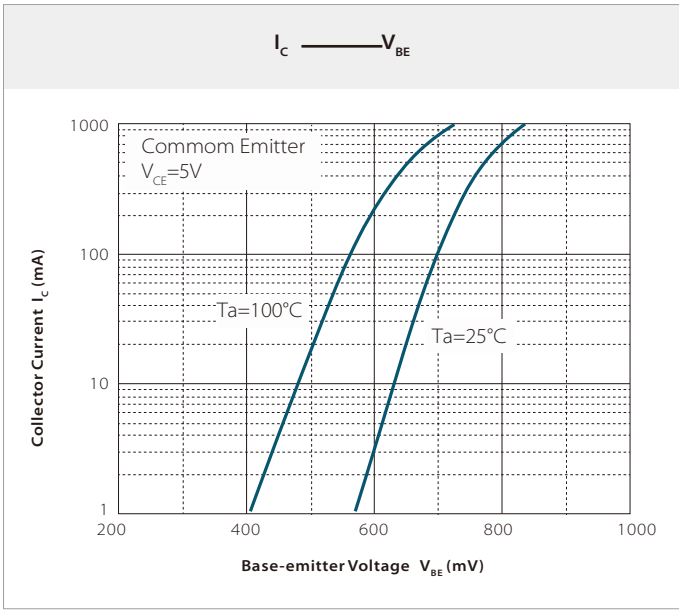


$V_{CE\text{sat}}$  —  $I_C$

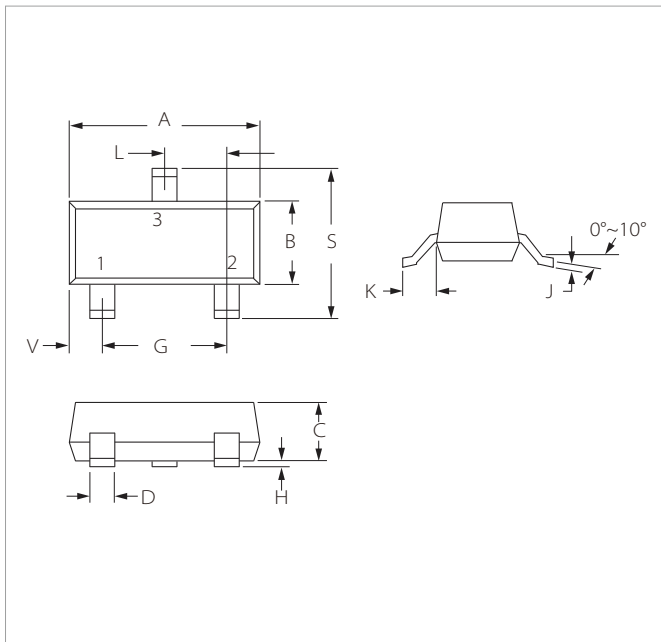


$V_{BE\text{sat}}$  —  $I_C$



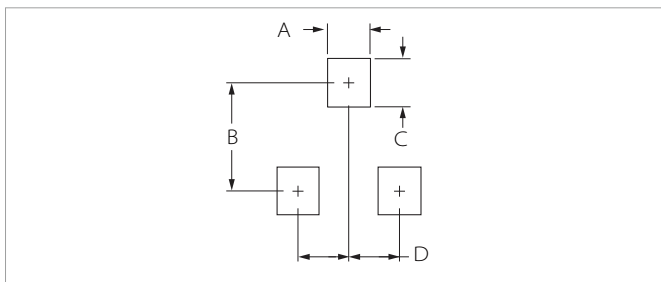


## SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.04	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.89	1.11	0.035	0.044
D	0.37	0.50	0.015	0.020
G	1.78	2.04	0.070	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.64	0.083	0.104
V	0.45	0.60	0.018	0.024

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
FMMT491	SOT-23	3000PCS	7"

To find your local partner within Semiwell's website : [www.semiwell.com.cn](http://www.semiwell.com.cn)

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