

FEATURES

Low Collector-Emitter saturation voltage $V_{CE(sat)}$

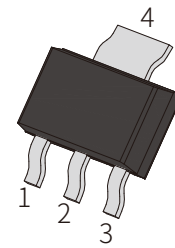
High collector current capability

MECHANICAL DATA

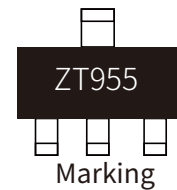
Case: SOT-223

Molding compound: UL flammability classification rating 94V-0

Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



SOT-223

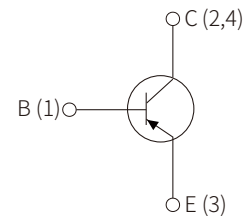


Marking

APPROVALS

RoHS Compliance with 2011/65/EU

HF Compliance with IEC61249-2-21:2003



Schematic Symbol

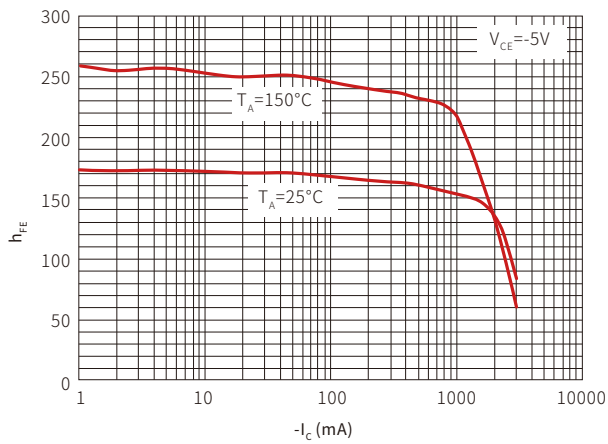
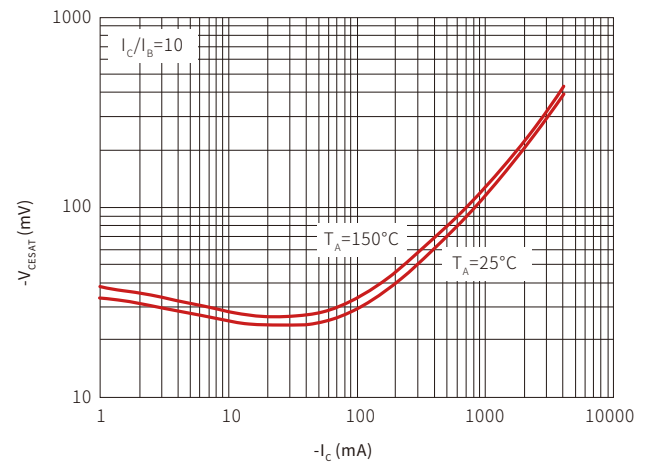
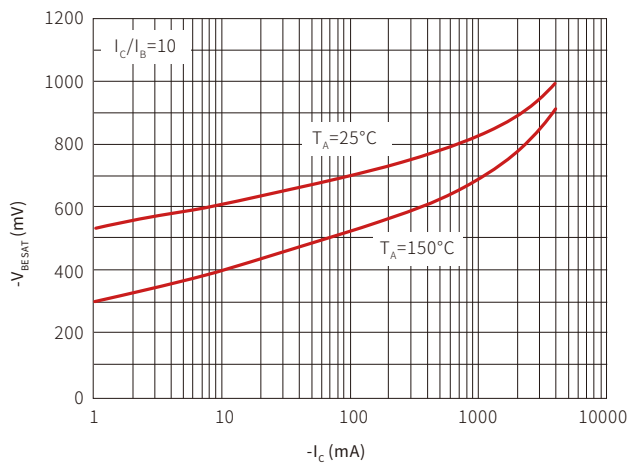
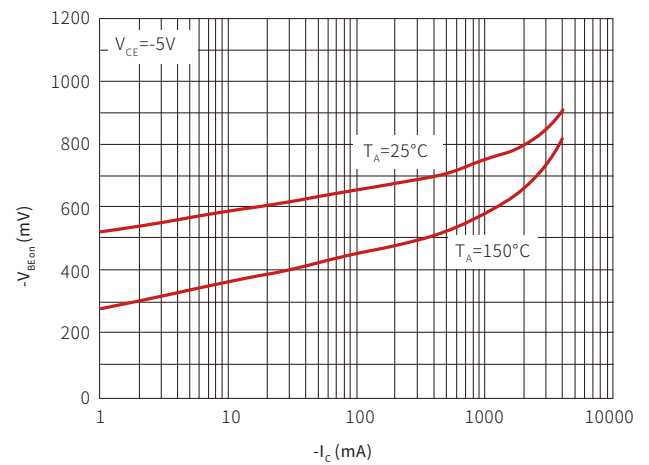
MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	-180	V
Collector-Emitter Breakdown Voltage	V_{CEO}	-140	
Emitter-Base Breakdown Voltage	V_{EBO}	-6	
Collector Current (Continuous)	I_C	-4	A
Collector Current (Peak)	I_{CM}	-10	A
Base Current	I_B	-3	A
Power Dissipation	P_D	1	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	68	$^{\circ}\text{C/W}$
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	3	$^{\circ}\text{C/W}$
Junction Temperature Range	T_J	-55~+150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS (T_A=25°C)

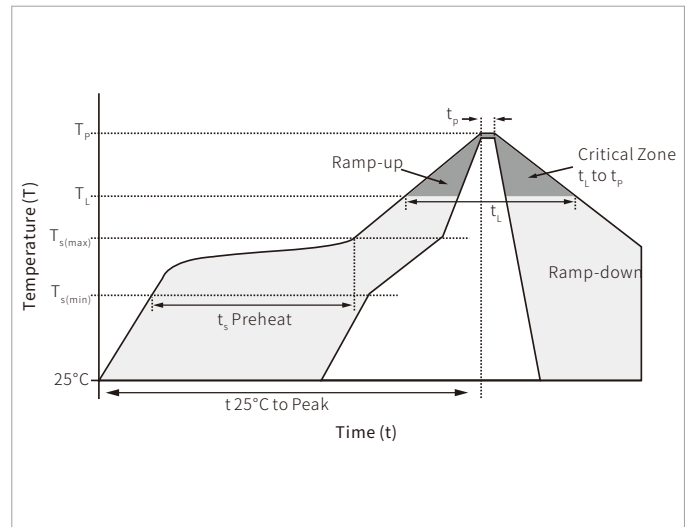
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	V _{(BR)CBO}	I _C =-100μA, I _E =0	-180			V
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =-10mA, I _B =0	-140			
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	I _E =-100μA, I _C =0	-6			
Collector Cut-off Current	I _{CBO}	V _{CB} =-150V, I _E =0			-50	nA
		V _{CB} =-150V, I _E =0, T _A =100°C			-1	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} =-6V, I _C =0			-10	nA
DC Current Gain	h _{FE}	V _{CE} =-5V, I _C =-10mA	100			
		V _{CE} =-5V, I _C =-1A	110		300	
		V _{CE} =-5V, I _C =-3A	75			
		V _{CE} =-5V, I _C =-10A		10		
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =-100mA, I _B =-5mA			-0.06	V
		I _C =-500mA, I _B =-50mA			-0.12	
		I _C =-1A, I _B =-100mA			-0.15	
		I _C =-3A, I _B =-300mA			-0.37	
Base-Emitter Saturation Voltage	V _{BE(sat)}	I _C =-3A, I _B =-300mA			-1.11	V
Base-Emitter Voltage	V _{BE(on)}	I _C =-3A, V _{CE} =-5V			-0.95	V
Transition Frequency	f _T	V _{CE} =-10V, I _C =-100mA, f=50MHz		110		MHz
Output Capacitance	C _{ob}	V _{CB} =-20V, f=1MHz		40		pF
Turn-on Time	t _{on}	I _C =-1A, I _{B1} =-100mA I _{B2} =100mA, V _{CC} =-50V		68		ns
Turn-off Time	t _{off}			1030		

TYPICAL CHARACTERISTICS

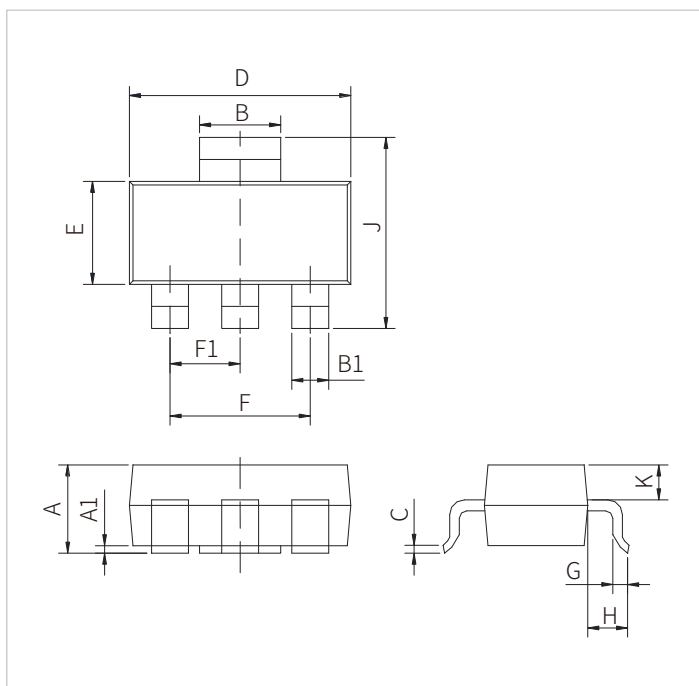
 h_{FE} vs. I_C

 $V_{CE(sat)}$ vs. I_C

 $V_{BE(sat)}$ vs. I_C

 $V_{BE(on)}$ vs. I_C


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C



SOT-223 PACKAGE DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.50		1.80	0.059		0.071
A1	0.01		0.06	0.001		0.002
B	2.90		3.10	0.114		0.122
B1	0.60		0.80	0.024		0.031
C	0.22		0.32	0.009		0.013
D	6.30		6.70	0.248		0.264
E	3.30		3.70	0.130		0.146
F		4.60			0.181	
F1		2.30			0.091	
G	0.70		1.10	0.028		0.043
H	1.50		2.00	0.059		0.079
J	6.70		7.30	0.264		0.287
K		0.90			0.035	

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
FZT955	SOT-223	2500PCS	13"

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