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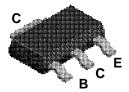
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Discrete Power & Signal Technologies

July 1998

FZT649



SOT-223

NPN Low Saturation Transistor

These devices are designed with high current gain and low saturation voltage with collector currents up to 3A continuous.

Symbol	Parameter	FZT649	Units
V _{CEO}	Collector-Emitter Voltage	25	V
V _{CBO}	Collector-Base Voltage	35	V
V _{EBO}	Emitter-Base Voltage	5	V
Ic	Collector Current - Continuous	3	А
T _J , T _{stg}	Operating and Storage Junction Temperature Range	-55 to +150	°C

^{*}These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150°C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics $T_{A=25^{\circ}\text{C unless otherwise noted}}$

Symbol	Characteristic	Max	Units
		FZT649	
P _D	Total Device Dissipation	2	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62.5	°C/W

NPN Low Saturation Transistor

(continued)

Electrical Characteristics

 $T_{\text{A}\,=\,25^{\circ}\text{C}\,\text{unless otherwise noted}}$

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHA	RACTERISTICS				
BV _{CEO}	Collector-Emitter Breakdown Voltage	I _C = 10 mA	25		V
BV _{CBO}	Collector-Base Breakdown Voltage	I _C = 100 μA	35		V
BV _{EBO}	Emitter-Base Breakdown Voltage	I _E = 100 μA	5		V
I _{CBO}	Collector Cutoff Current	V _{CB} = 30 V		100	nA
		V _{CB} = 30 V, T _A =100°C		10	uA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 4V		100	nA
ON CHAR	ACTERISTICS*				
h _{FE}	DC Current Gain	I _C = 50 mA, V _{CE} = 2 V	70		-
		I _C = 1 A, V _{CE} = 2 V	100	300	
		I _C = 2 A, V _{CE} = 2 V	75		
		I _C = 6 A, V _{CE} = 2 V	15		
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 1 A, I _B = 100 mA		300	mV
OL(Sat)		I _C = 3 A, I _B = 300 mA		600	
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 1 A, I _B = 100 mA		1.25	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 1 A, V _{CE} = 2 V		1	V
SMALL SI	GNAL CHARACTERISTICS				
C _{obo}	Output Capacitance	V _{CB} = 10 V, I _E = 0, f = 1MHz		50	pF
f _T	Transition Frequency	I _C = 100 mA,V _{CE} = 5 V, f=100MHz	150		-

*Pulse Test: Pulse Width $\leq 300~\mu s,~Duty~Cycle \leq 2.0\%$

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