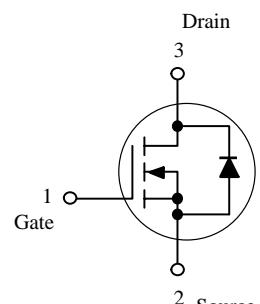


N-CHANNEL POWER MOSFET

DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
FTK123LT1G	SA	3000/Tape&Reel
FTK123LT3G	SA	10000/Tape&Reel



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V _{DSS}	100	Vdc
Gate-Source Voltage – Continuous – Non-repetitive ($t_p \leq 50\mu s$)	V _{GS} V _{GSM}	± 20 ± 40	Vdc Vpk
Drain Current Continuous (Note 1.) Pulsed (Note 2.)	I _D I _{DM}	0.17 0.68	Adc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note 3.) $T_A = 25^\circ C$ Derate above $25^\circ C$	P _D	225 1.8	mW mW/ C
Thermal Resistance, Junction to Ambient	R _{θJA}	556	C/W
Junction and Storage Temperature	T _J , T _{stg}	-55 to +150	C

1. The Power Dissipation of the package may result in a lower continuous drain current.
2. Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2.0\%$.
3. FR-5 = 1.0 X 0.75 X 0.062 in.

**ELECTRICAL CHARACTERISTICS** (T_A = 25 °C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit	
OFF CHARACTERISTICS						
Drain–Source Breakdown Voltage (V _{GS} = 0, I _D = 250 μAdc)	V _{(BR)DSS}	100	—	—	Vdc	
Zero Gate Voltage Drain Current (V _{GS} = 0, V _{DS} = 100 Vdc) T _J = 25 °C T _J = 125 °C	I _{DSS}	— —	— —	15 60	μAdc	
Gate–Body Leakage Current (V _{GS} = 20 Vdc, V _{DS} = 0)	I _{GSS}	—	—	50	nAdc	
ON CHARACTERISTICS (Note 4.)						
Gate Threshold Voltage (V _{DS} = V _{GS} , I _D = 1.0 mA)	V _{GS(th)}	0.8	—	2.8	Vdc	
Static Drain–Source On–Resistance (V _{GS} = 10 Vdc, I _D = 100 mA)	r _{DS(on)}	—	5.0	6.0	Ω	
Forward Transconductance (V _{DS} = 25 Vdc, I _D = 100 mA)	g _{FS}	80	—	—	mmhos	
DYNAMIC CHARACTERISTICS						
Input Capacitance (V _{DS} = 25 Vdc, V _{GS} = 0, f = 1.0 MHz)	C _{iss}	—	20	—	pF	
Output Capacitance (V _{DS} = 25 Vdc, V _{GS} = 0, f = 1.0 MHz)	C _{oss}	—	9.0	—	pF	
Reverse Transfer Capacitance (V _{DS} = 25 Vdc, V _{GS} = 0, f = 1.0 MHz)	C _{rss}	—	4.0	—	pF	
SWITCHING CHARACTERISTICS (Note 4.)						
Turn–On Delay Time	(V _{CC} = 30 Vdc, I _C = 0.28 Adc, V _{GS} = 10 Vdc, R _{GS} = 50 Ω)	t _{d(on)}	—	20	—	ns
Turn–Off Delay Time		t _{d(off)}	—	40	—	ns
REVERSE DIODE						
Diode Forward On–Voltage (I _D = 0.34 Adc, V _{GS} = 0 Vdc)	V _{SD}	—	—	1.3	V	

4. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%.

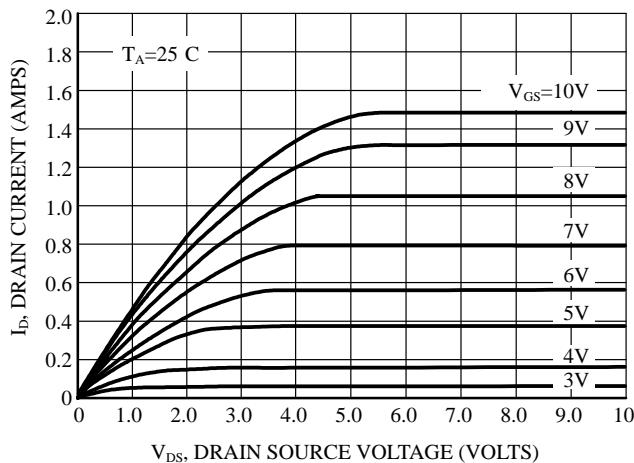
TYPICAL ELECTRICAL CHARACTERISTICS


Figure 1. Ohmic Region

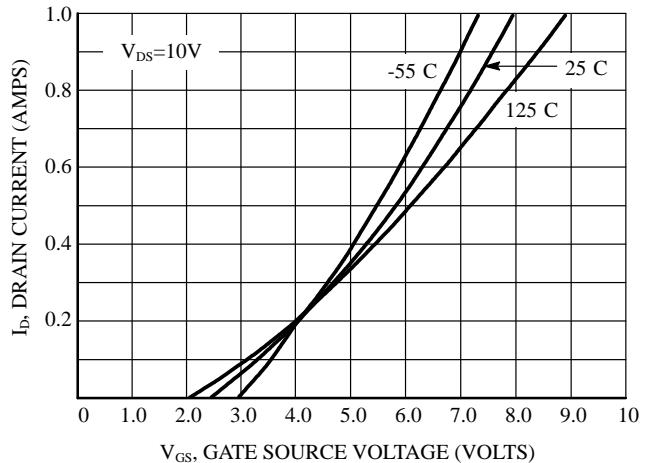


Figure 2. Transfer Characteristics

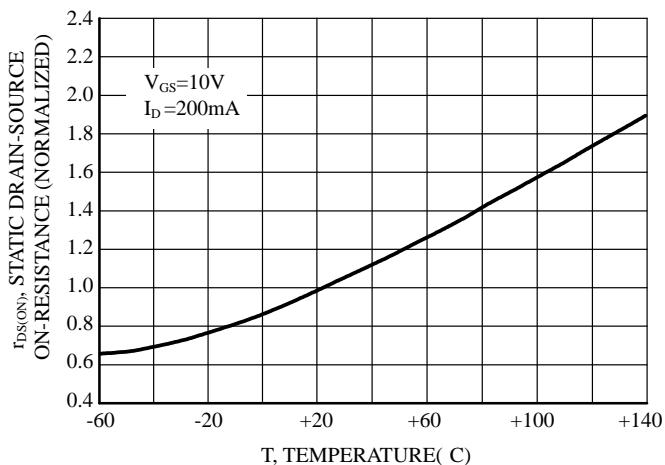


Figure 3. Temperature versus Static Drain-Source On-Resistance

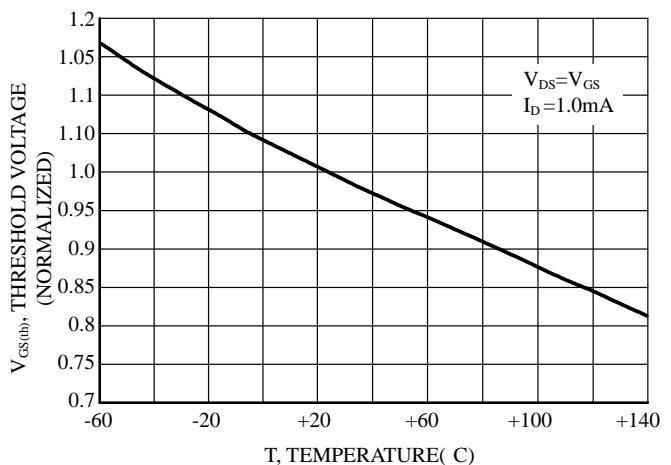
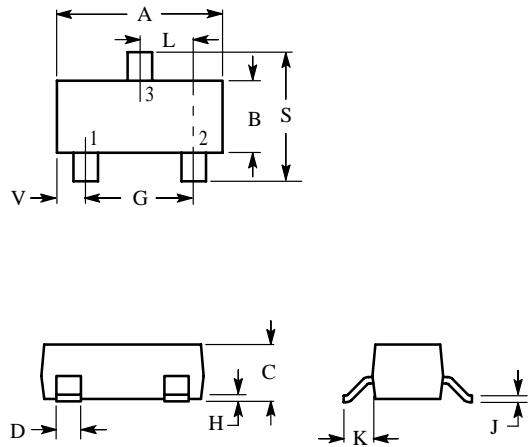


Figure 4. Temperature versus Gate Threshold Voltage

SOT-23

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

PIN 1 Gate
2 Source
3 Drain

