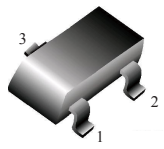
POWER MOSFET
130 mAmps, 50 Volts

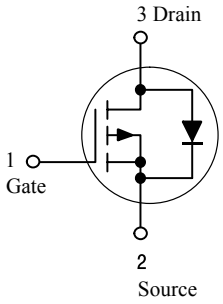
P–Channel SOT–23

These miniature surface mount MOSFETs reduce power loss conserve energy, making this device ideal for use in small power management circuitry. Typical applications are dc–dc converters, load switching, power management in portable and battery–powered products such as computers, printers, cellular and cordless telephones.

- Energy Efficient
- Miniature SOT–23 Surface Mount Package Saves Board Space



SOT –23



MAXIMUM RATINGS (T_J = 25 °C unless otherwise noted)

Rating	Symbol	Value	Unit
Drain–to–Source Voltage	V_{DSS}	50	Vdc
Gate–to–Source Voltage – Continuous	V_{GS}	±20	Vdc
Drain Current – Continuous @ T_A = 25°C – Pulsed Drain Current ($t_p \leq 10\mu s$)	 I_D I_{DM}	 130 520	mA
Total Power Dissipation @ T_A = 25°C	P_D	225	mW
Operating and Storage Temperature Range	T_J, T_{stg}	– 55 to 150	°C
Thermal Resistance – Junction–to–Ambient	$R_{\theta JA}$	556	°C/W
Maximum Lead Temperature for Soldering Purposes, for 10 seconds	T_L	260	°C

ORDERING INFORMATION

Device	Marking	Shipping
FTK84LT1G	PD	3000/Tape&Reel

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)		$V_{(BR)DSS}$	50	–	–	Vdc
Zero Gate Voltage Drain Current		I_{DSS}				μAdc
(V_{DS} = 25 Vdc, V_{GS} = 0 Vdc)			–	–	0.1	
(V_{DS} = 50 Vdc, V_{GS} = 0 Vdc)			–	–	15	
(V_{DS} = 50 Vdc, V_{GS} = 0 Vdc, T_J = 125°C)			–	–	60	
Gate–Body Leakage Current (V_{GS} = ±20 Vdc, V_{DS} = 0Vdc)		I_{GSS}	–	–	±60	μAdc
ON CHARACTERISTICS (Note 1.)						
Gate-Source Threshold Voltage (V_{DS}= V_{GS}, I_D = 1.0 mAdc)		$V_{GS(th)}$	0.8	–	2.0	Vdc
Static Drain-to-Source On–Resistance (V_{GS}= 5.0 Vdc, I_D = 100 mAdc)		$r_{DS(on)}$	–	5.0	10	Ω
Transfer Admittance (V_{DS} = 25 Vdc, I_D = 100 mAdc, f = 1.0 MHz)		$\|y_{FS}\|$	50	–	–	mS
DYNAMIC CHARACTERISTICS						
Input Capacitance	(V_{DS}= 5.0 Vdc)	C_{iss}	–	30	–	pF
Output Capacitance	(V_{DS}= 5.0 Vdc)	C_{oss}	–	10	–	pF
Transfer Capacitance	(V_{DG}= 5.0 Vdc)	C_{rss}	–	5.0	–	pF
SWITCHING CHARACTERISTICS (Note 2.)						
Turn–On Delay Time	(V_{DD} = -15 Vdc , I_D = -2.5 Adc, R_L= 50 Ω)	$t_{d(on)}$	–	2.5	–	ns
Rise Time		t_r	–	1.0	–	ns
Turn–Off Delay Time		$t_{d(off)}$	–	16	–	ns
Fall Time		t_f	–	8.0	–	ns
Gate Charge		Q_T	–	6000	–	pC
SOURCE-DRAIN DIODE CHARACTERISTICS						
Continuous Current		I_S	–	–	0.130	A
Pulsed Current		I_{SM}	–	–	0.520	A
Forward Voltage (Note 2.)		V_{SD}	–	2.5	–	V

1. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%.
2. Switching characteristics are independent of operating junction temperature.

TYPICAL ELECTRICAL CHARACTERISTICS

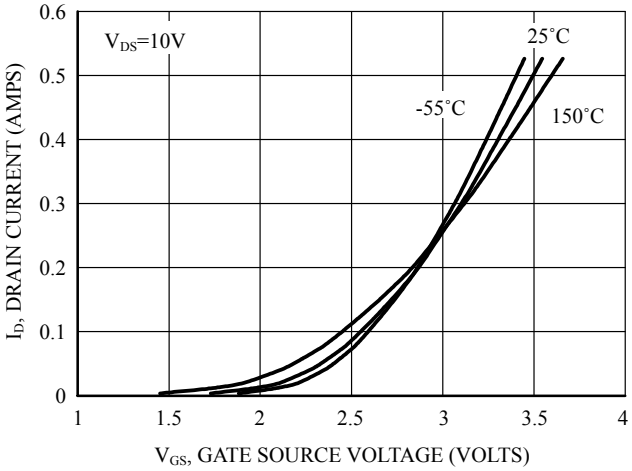


Figure 1. Transfer Characteristics

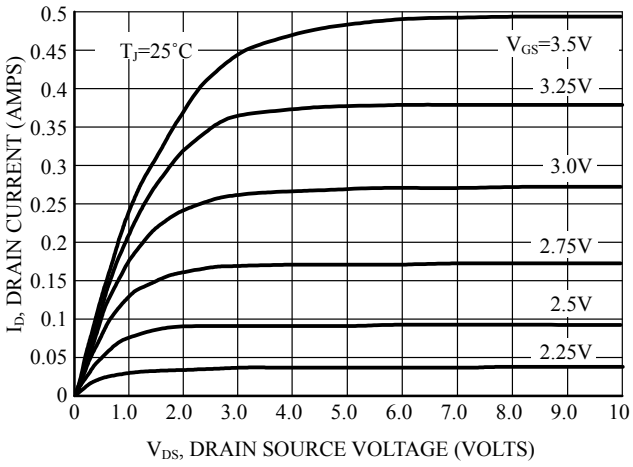


Figure 2. On–Region Characteristics

TYPICAL ELECTRICAL CHARACTERISTICS

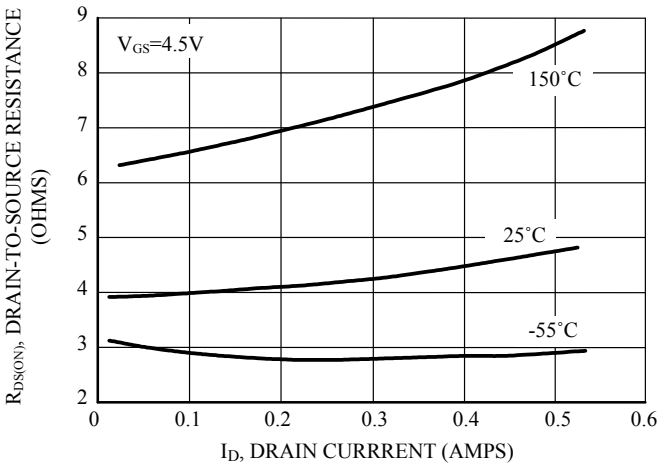


Figure 3. On–Resistance versus Drain Current

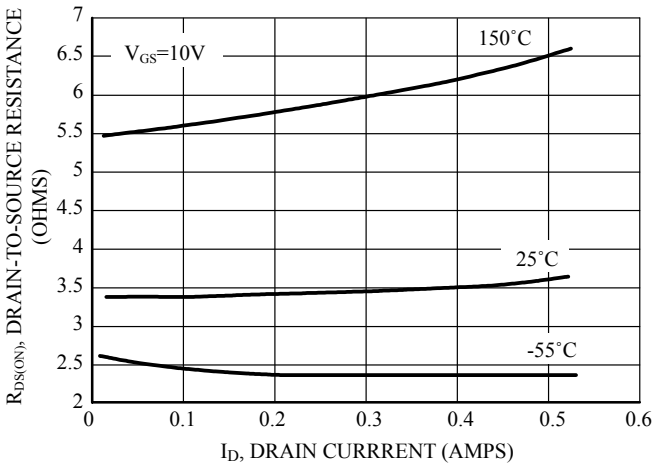


Figure 4. On–Resistance versus Drain Current

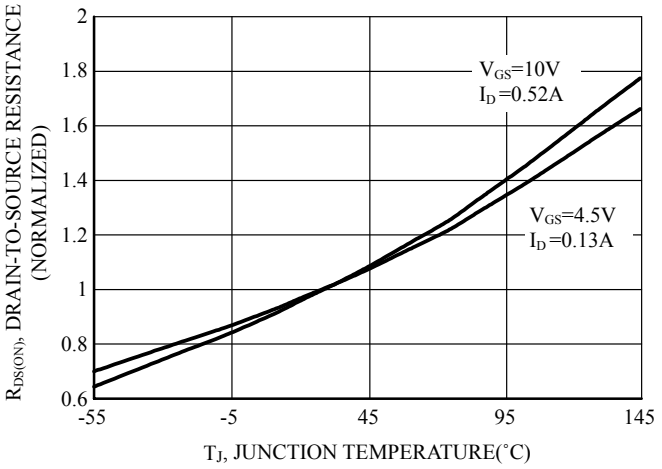


Figure 5. On–Resistance Variation with Temperature

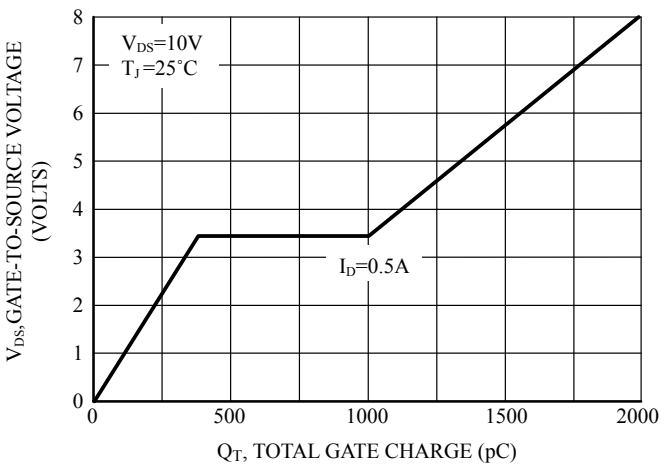


Figure 6. Gate Charge

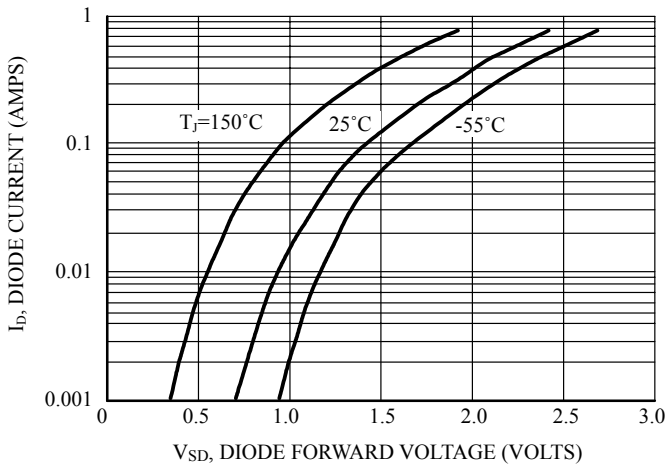
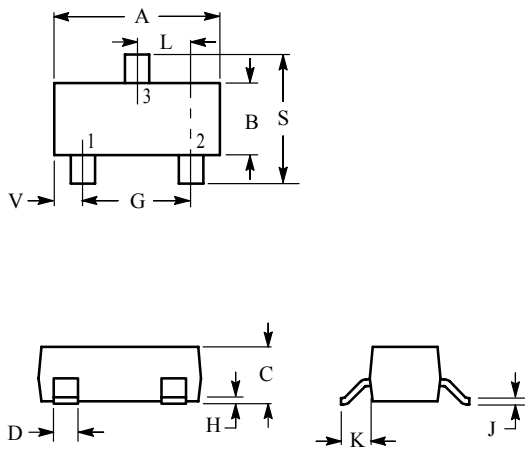


Figure 7. Body Diode Forward Voltage

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. BASE
2. EMITTER
3. COLLECTOR