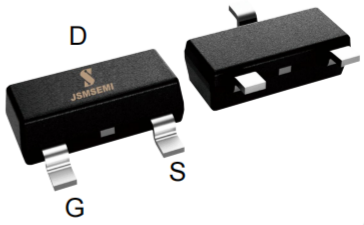
■ DESCRIPTION

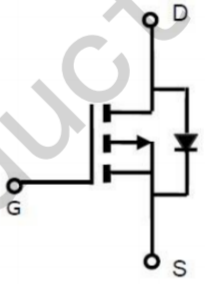
The ZXM61P02FTA is the P-Channel logic enhancement mode power field effect transistor is produced using high cell density advanced trench technology..

This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application, and low in-line power loss are needed in a very small outline surface mount package.



■ FEATURE

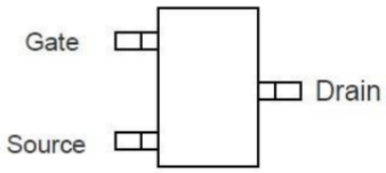
- ***-20V/-4.3A, $R_{DS(ON)}$=30mΩ (typ.)@V_{GS}=-4.5V***
- ***-20V/-3.5A,$R_{DS(ON)}$=40mΩ (typ.)@V_{GS}=-2.5V***
- ***-20V/-2.0A,$R_{DS(ON)}$=56mΩ (typ.)@V_{GS}=-1.8V***
- ***-20V/-1.0A,$R_{DS(ON)}$=85mΩ (typ.)@V_{GS}=-1.5V***
- Super high design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and Maximum DC current capability
- Full RoHS compliance
- SOT23-3 package design



P-Channel

■ APPLICATIONS

- Power Management
- Portable Equipment
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter



TOP VIEW
SOT-23

■ ABSOLUTE MAXIMUM RATINGS (T_A = 25℃ Unless otherwise noted)

Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		-20	V
V_{GSS}	Gate-Source Voltage		±10	V
I_D	Continuous Drain Current (T_C=25℃)	V_{GS}=-10V	-4.2	A
	Continuous Drain Current (T_C=70℃)		-3.5	A
I_{DM}	Pulsed Drain Current		-20	A
P_D	Power Dissipation	T_A=25℃	1.5	W
		T_A=70℃	0.9	
T_J	Operation Junction Temperature		150	℃
T_{STG}	Storage Temperature Range		-55~+150	℃
$R_{\theta JA}$	Thermal Resistance Junction to Ambient		120	℃/W

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress rating only and functional device operation is not implied

■ ELECTRICAL CHARACTERISTICS (T_A=25℃ Unless otherwise noted)

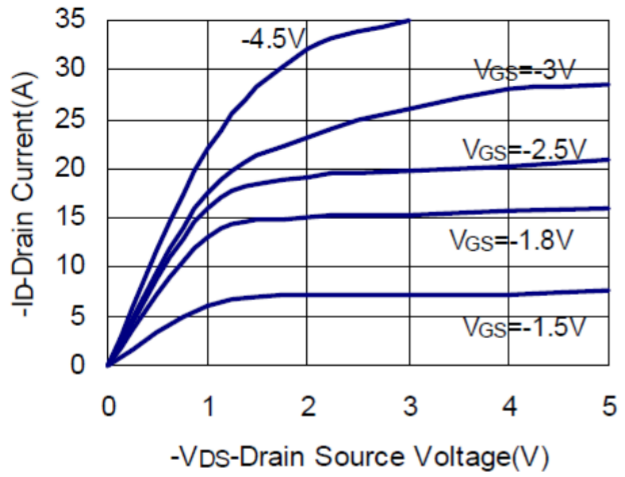
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Parameters						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=-250uA	-20			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250uA	-0.3		-1.0	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±10V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-20V, V_{GS}=0			-1	uA
		V_{DS}=-20V, V_{GS}=0 T_J=55℃			-5	
$R_{DS(ON)}$	Drain-Source On-Resistance	V_{GS}=-4.5V, I_D=-4.0A		30	40	mΩ
		V_{GS}=-2.5V, I_D=-4.0A		40	60	
		V_{GS}=-1.8V, I_D=-2.0A		56	78	
		V_{GS}=-1.5V, I_D=-1.0A		85	110	
Gfs	Forward Transconductance	V_{DS}=-5V, I_D=-4.0A		22		S
Source-Drain Diode						
V_{SD}	Diode Forward Voltage	I_S=-1.0A, V_{GS}=0V		-0.67	-1.2	V
Dynamic Parameters						
Q_g	Total Gate Charge	V_{DS}=-10V V_{GS}=-4.5V I_D=-4.0A		11.1		nC
Q_{gs}	Gate-Source Charge			3.1		
Q_{gd}	Gate-Drain Charge			2.4		
C_{iss}	Input Capacitance	V_{DS}=-10V V_{GS}=0V f=1MHz		989		pF
C_{oss}	Output Capacitance			167		
C_{rss}	Reverse Transfer Capacitance			75.5		
$T_{d(on)}$	Turn-On Time	V_{DS}=-10V I_D=-3.7A V_{GEN}=-4.5V R_G=1Ω		712		nS
T_r				1386		
$T_{d(off)}$	Turn-Off Time			9.1		
T_f				4		

Note: 1. Pulse test: pulse width<=300uS, duty cycle<=2%

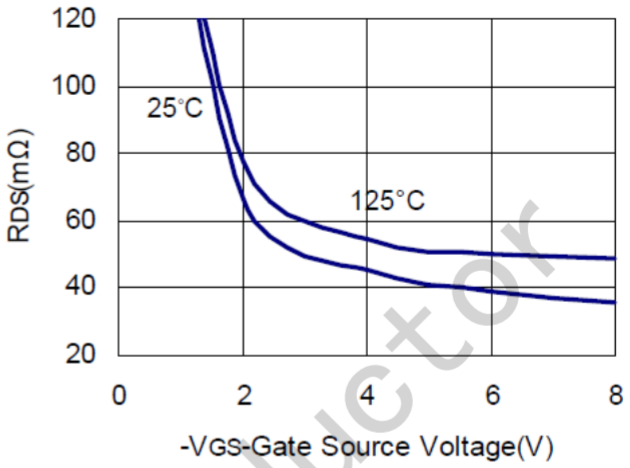
2.Static parameters are based on package level with recommended wire bonding

■ TYPICAL CHARACTERISTICS (25℃ Unless Note)

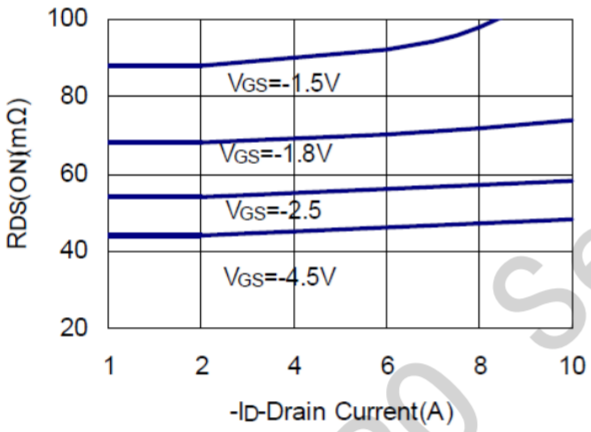
Output Characteristics



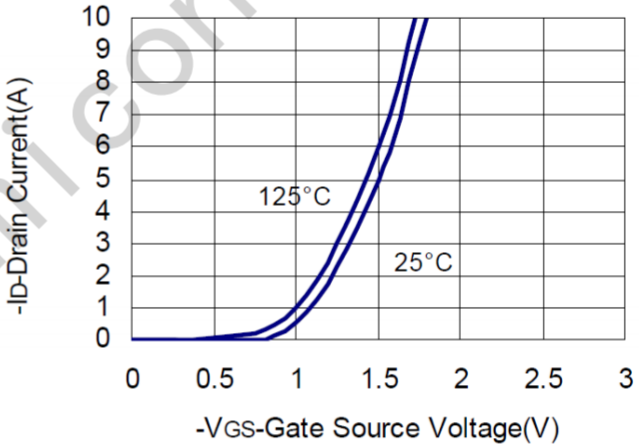
Drain-Source On Resistance



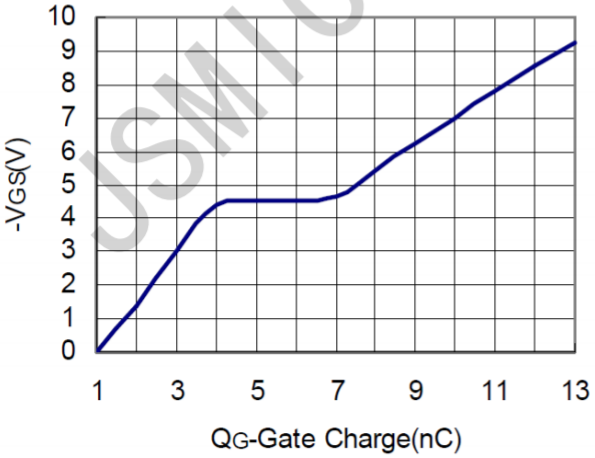
Drain Source On Resistance



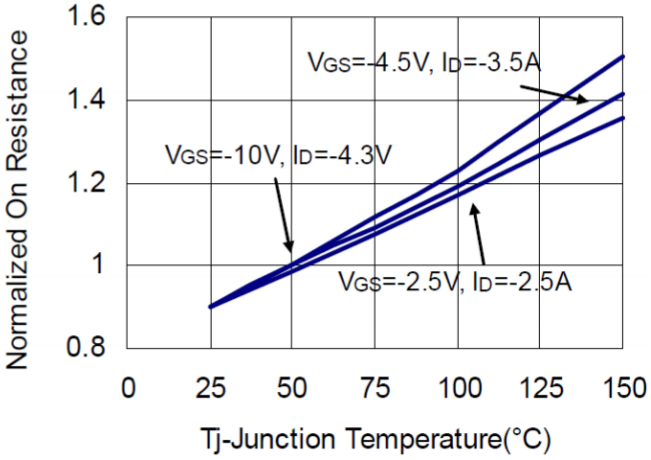
Transfer Characteristics



Gate Charge

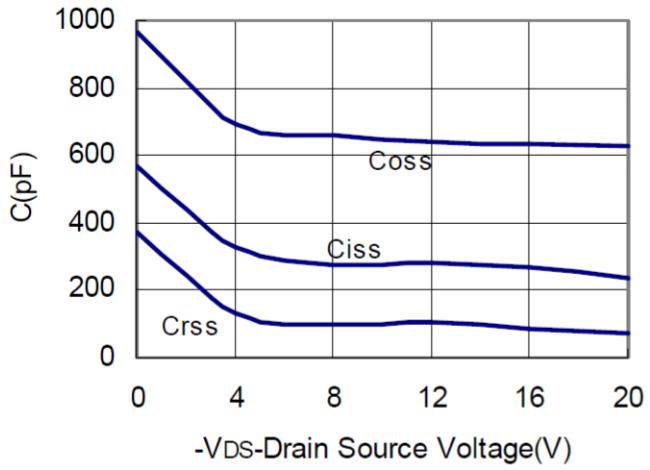


Drain Source Resistance

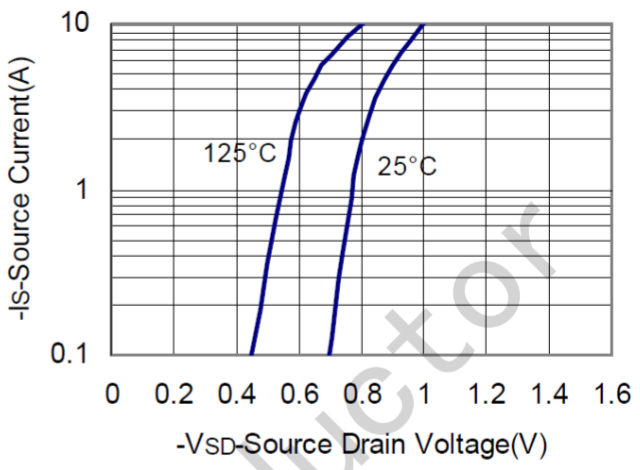


■ *TYPICAL CHARACTERISTICS (continuous)*

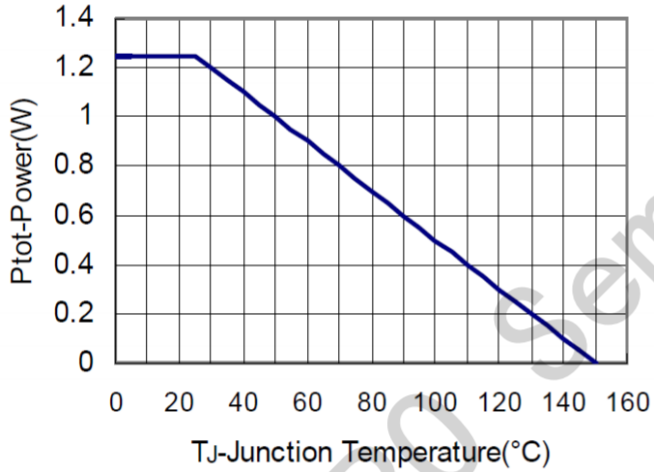
Capacitance



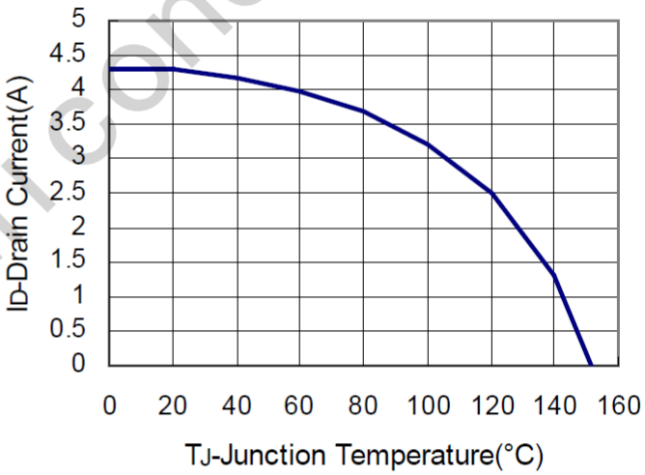
Source Drain Diode Forward



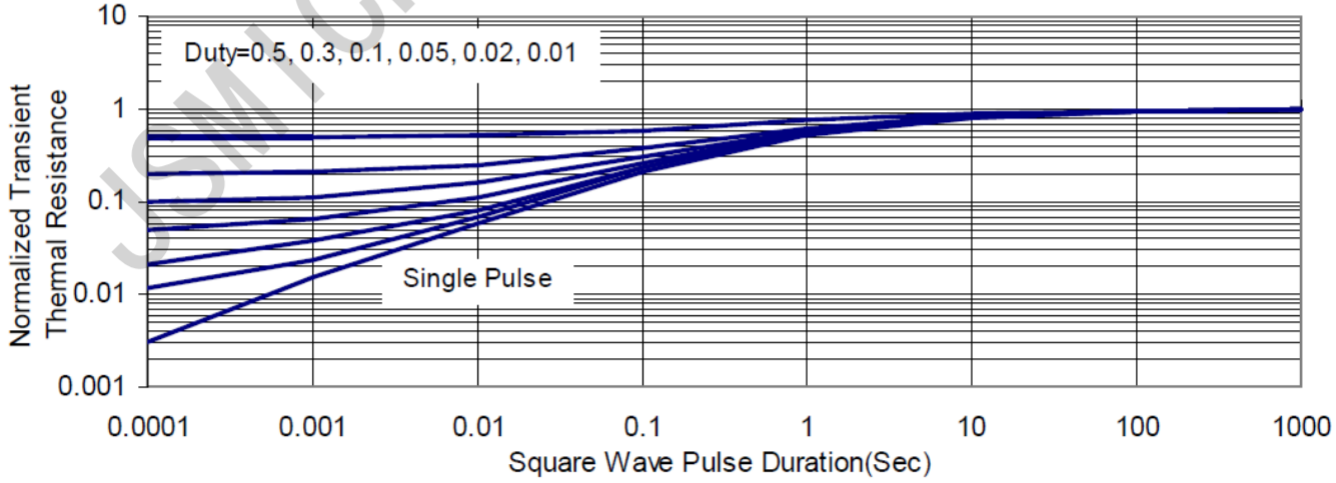
Power Dissipation



Drain Current

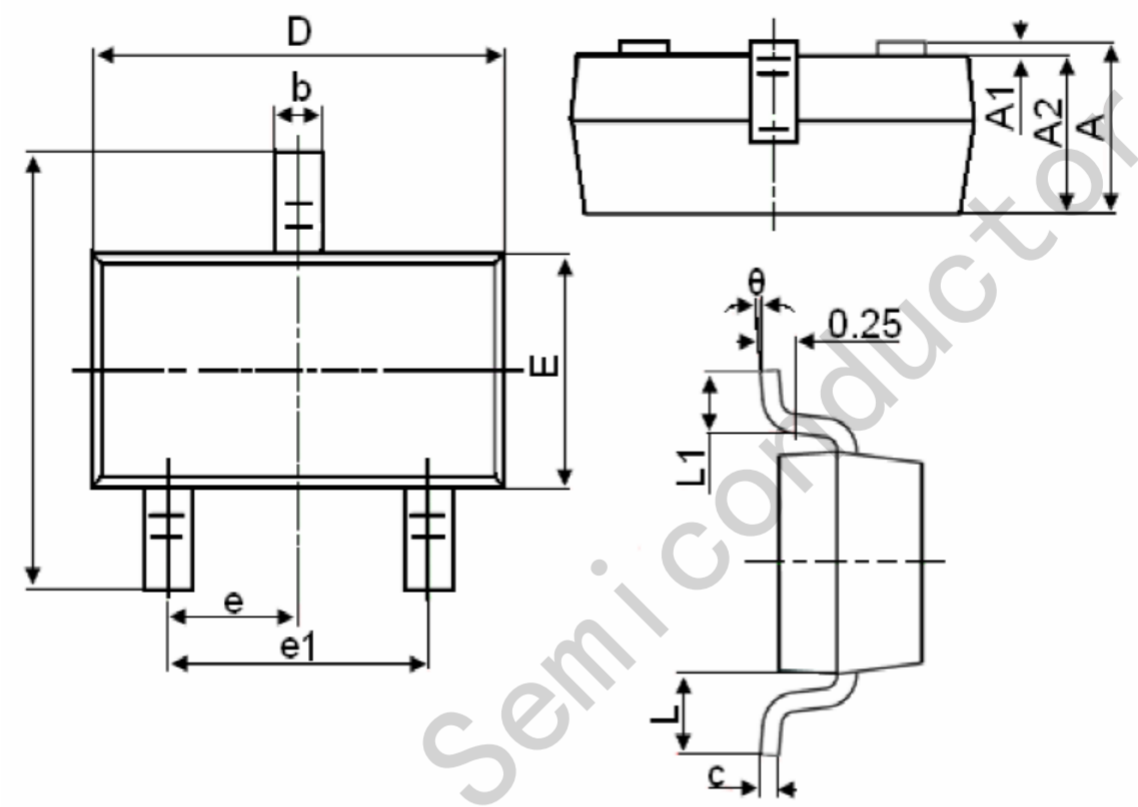


Thermal Transient Impedance



Package Information

SOT-23



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°