

60V P-Channel Enhancement Mode MOSFET

VDS= 60V

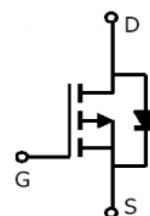
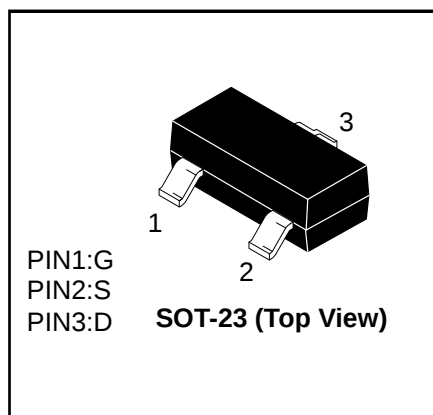
RDS(ON), Vgs@ -10.0V, Ids@ -2.0A < 100.0mΩ

RDS(ON), Vgs@ -4.5V, Ids@ -1.0A < 40mΩ

Features

Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance

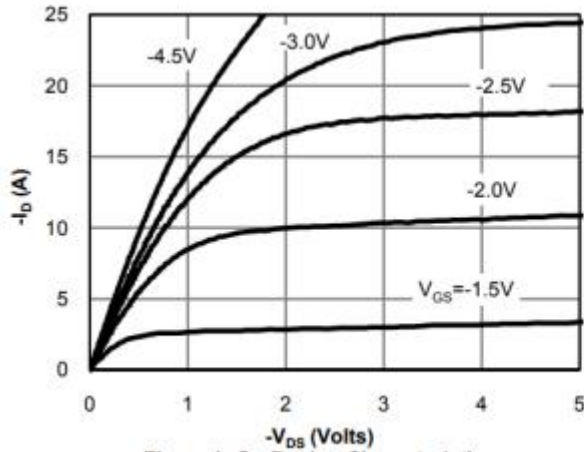
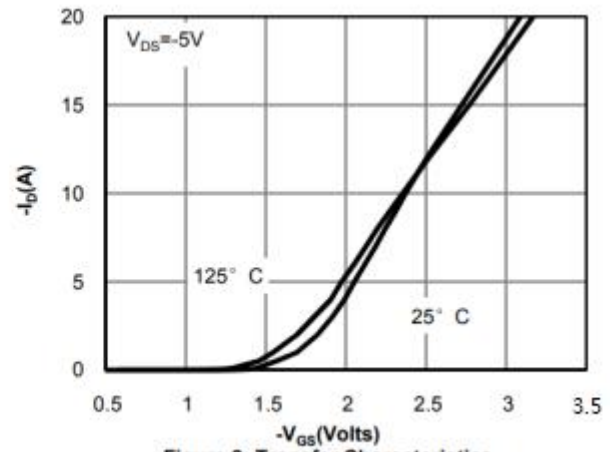
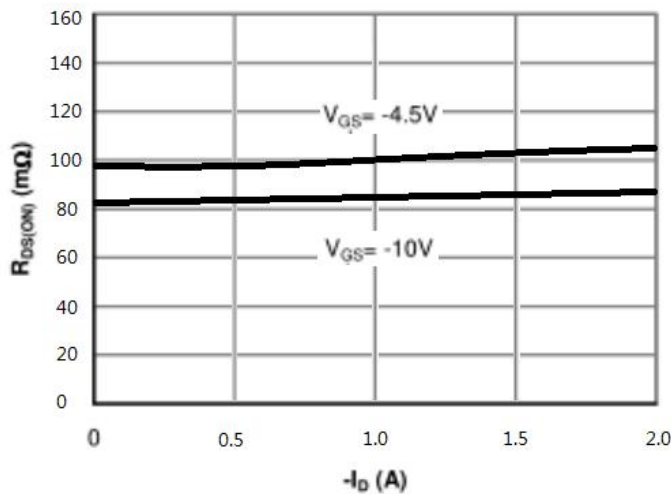
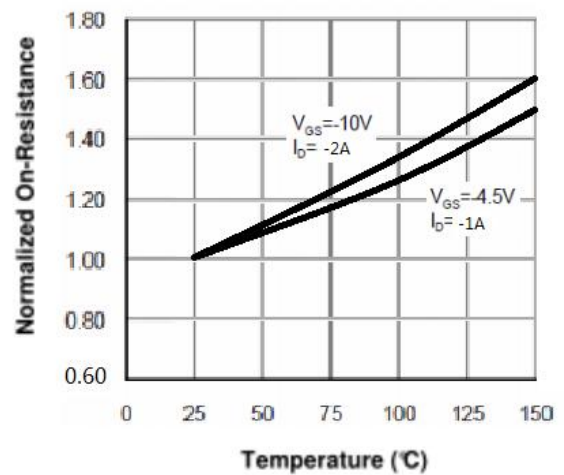
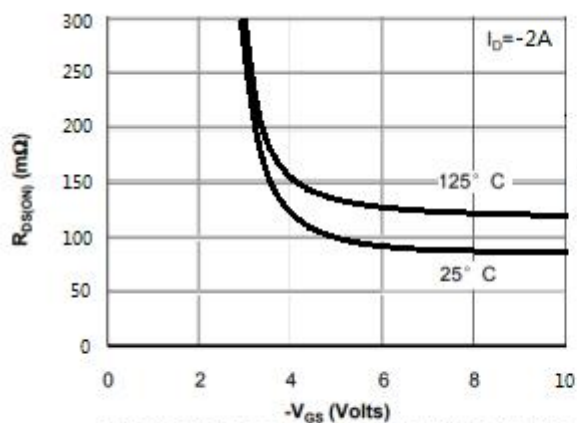
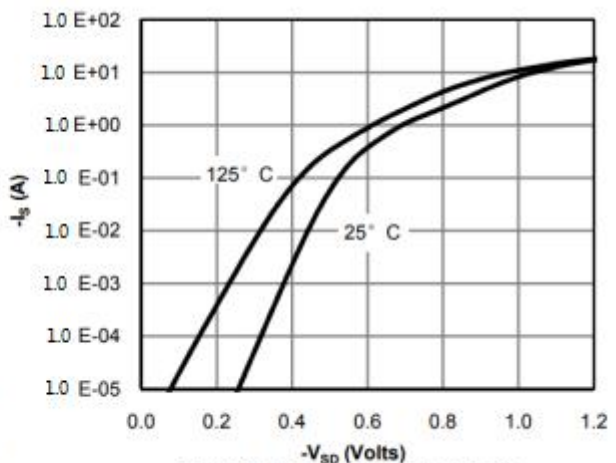


Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

Parameter		Symbol	Rating	Unit
Drain–Source Voltage		V _{DSS}	-60	V
Gate–Body Leakage Voltage		V _{GSS}	±20	V
Drain Current - Continuous		I _D	-5	A
Pulsed Drain Current		I _{DM}	-18	A
Power Dissipation (Surface Mounted on FR4 Board, t ≤ 10 sec.)		P _D	1.5	W
Operating and Storage Temperature Range		T _J , T _{STG}	-55~150	°C
Maximum Junction-to-Ambient	t ≤ 10s	R _{θJA}	118.6	°C/W
Maximum Junction-to-Ambient	Steady-State		161.6	°C/W
Maximum Junction-to-Lead	Steady-State	R _{θJL}	83.3	°C/W

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V$ $I_D=-250\mu A$	-60	-63		V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1	-1.5	-2.5	V
Static Drain–Source On–Resistance	$R_{DS(on)}$	$V_{GS}=-10V$ $I_D=-2A$		84	100	mΩ
		$V_{GS}=-4.5V$ $I_D=-1A$		103	125	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V$ $V_{GS}=0V$			-1.0	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=-20V$			-100	nA
		$V_{GS}=20V$			100	nA
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=-1A$ $T_J=25^\circ C$			-1.2	V
Input Capacitance	C_{iss}	$V_{DS}=-25V$ $V_{GS}=0V$ $f=1.0MHz$		885		pF
Output Capacitance	C_{oss}			90		
Reverse Transfer Capacitance	C_{rss}			64		
Total Gate Charge	Q_g	$V_{DS}=-30V$ $V_{GS}=-10.0V$ $I_D=-5A$		25		nC
Gate-to-Source Charge	Q_{gs}			3		
Gate-to-Drain Charge	Q_{gd}			7		
Turn–On Delay Time	$t_{d(on)}$	$V_{DD}=-30V$ $V_{GS}=-10V$ $R_L=7.5\Omega$ $R_G=3\Omega$		8		ns
Turn–On Rise Time	t_r			4		
Turn–Off Delay Time	$t_{d(off)}$			32		
Turn–Off Fall Time	t_f			7		

Electrical Characteristic Curve

Figure 1: On-Region Characteristics

Figure 2: Transfer Characteristics

Figure 3: On-Resistance vs. Drain Current and Gate Voltage

Figure 4: On-Resistance vs. Junction Temperature

Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

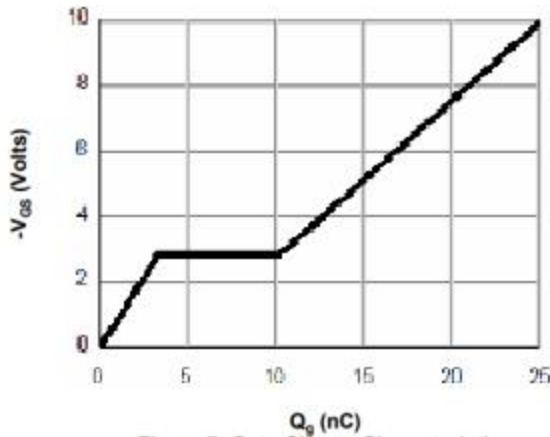


Figure 7: Gate-Charge Characteristics

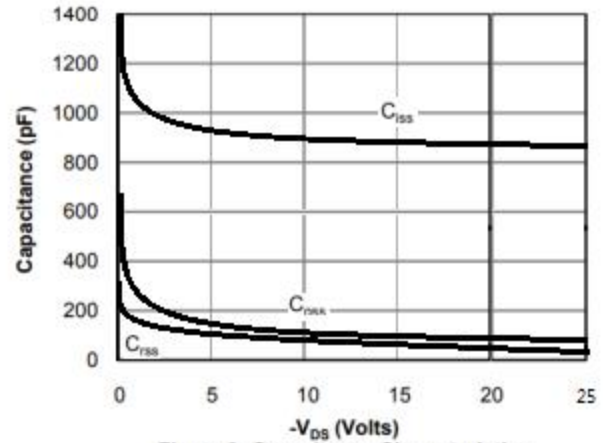


Figure 8: Capacitance Characteristics

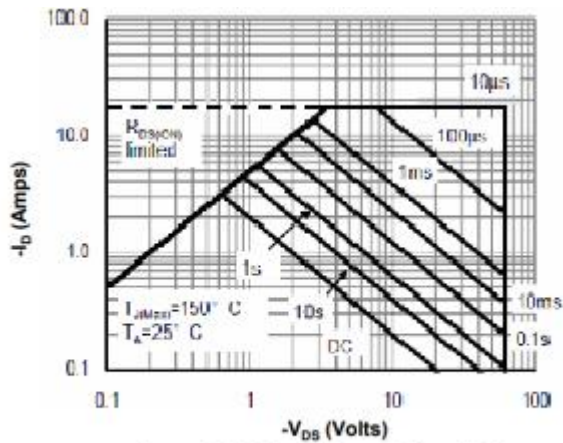


Figure 9: Maximum Forward Biased Safe Operating Area

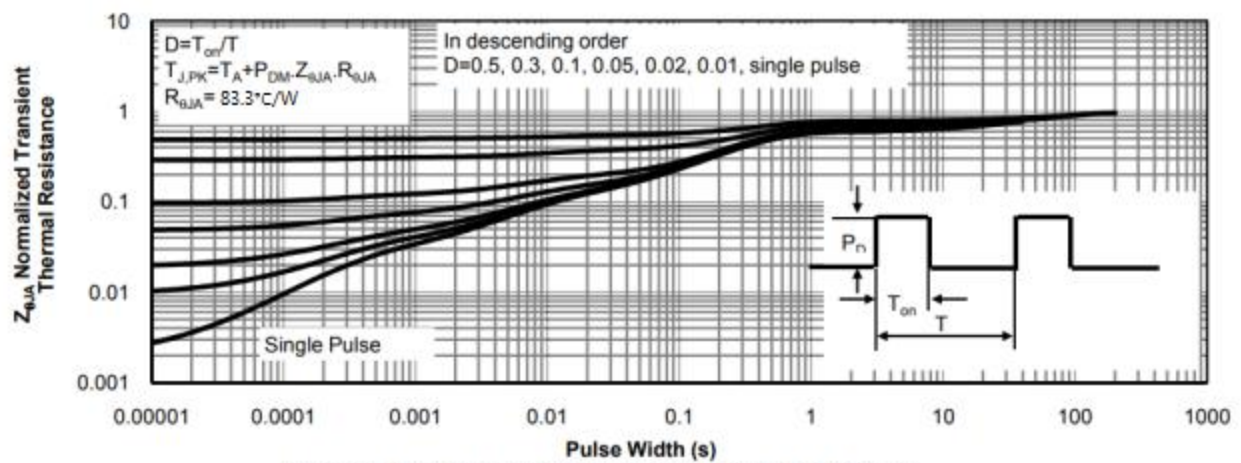
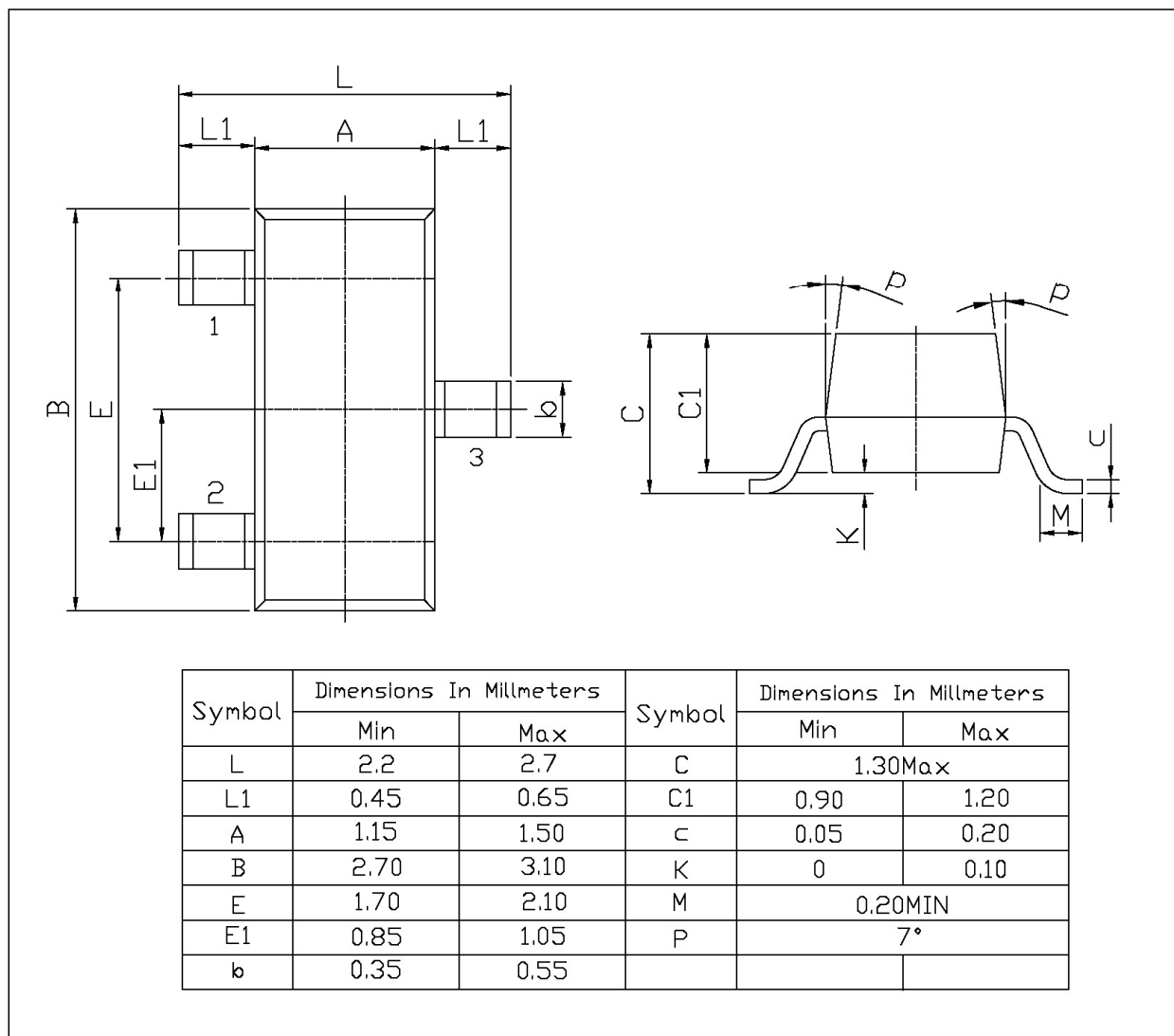


Figure 10: Normalized Maximum Transient Thermal Impedance

Dimension outline Unit:mm

SOT-23

单位; mm



SOT-23 Suggested Pad Layout

