

P-Channel Enhancement Mode MOSFET

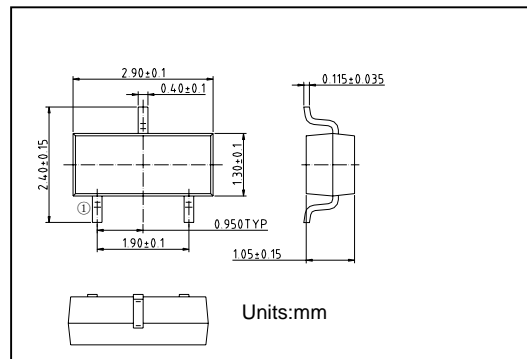
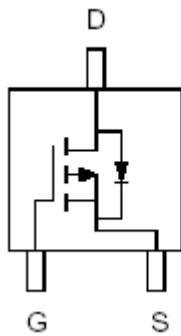
• Features

- -20V/-2.8A , $R_{DS(ON)}=72m\ \Omega$ (typ.) @ $V_{GS}=-10V$
 $R_{DS(ON)}=100m\ \Omega$ (typ.) @ $V_{GS}=-4.5V$
- Super High Dense Cell Design for Extremely Low $R_{DS(ON)}$
- Reliable and Rugged
- SOT-23 Package

• Applications

- Power Management in Notebook Computer
- Portable Equipment
- Battery Powered Systems.

• Equivalent circuit



• Absolute Maximum Ratings

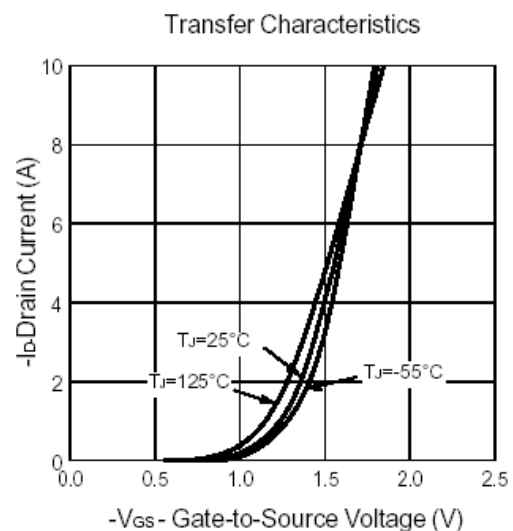
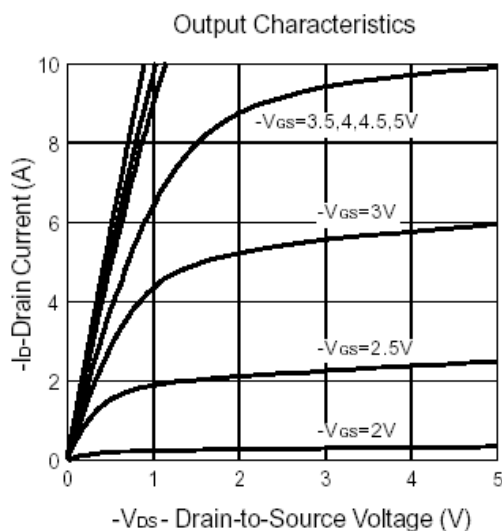
PARAMETER	SYMBOL	RATINGS	UNITS
Drain - Source Voltage	Vdss	-20	V
Gate - Source Voltage	Vgss	±16	V
Drain Current (DC)	Id	-2.8	A
Drain Current (Pulse)	Idp	-10	A
Maximum Power Dissipation	Pd(TA=25°C)	1.25	W
	Pd(TA=100°C)	0.5	W
Maximum Junction Temperature	Tch	150	°C
Storage Temperature	Tstg	-55~150	°C
Thermal Resistance - Junction to Ambient	$R_{\theta jA}$	100	°C/W

• Electrical Characteristics
Static

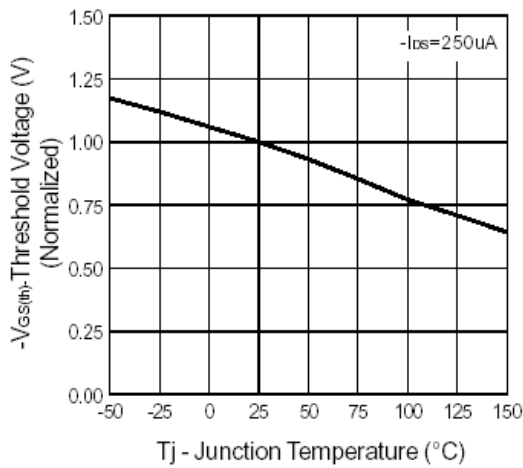
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS} = 0V, I_{DS} = -250 \mu A$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16V, V_{GS} = 0V$			1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}, I_{DS} = -250 \mu A$	0.6		1.5	V
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 16V, V_{DS} = 0V$			± 100	nA
Drain-Source On-state Resistance	$R_{DS(ON)}$	$V_{GS} = -10V, I_{DS} = -2.8A$		72	85	m Ω
		$V_{GS} = -4.5V, I_{DS} = -2.5A$		98	100	
Diode Forward Voltage	V_{DS}	$V_{GS} = 0V, I_{DS} = -1.25A$	0.6		1.3	V

Dynamic Characteristics Ta=25 ° C

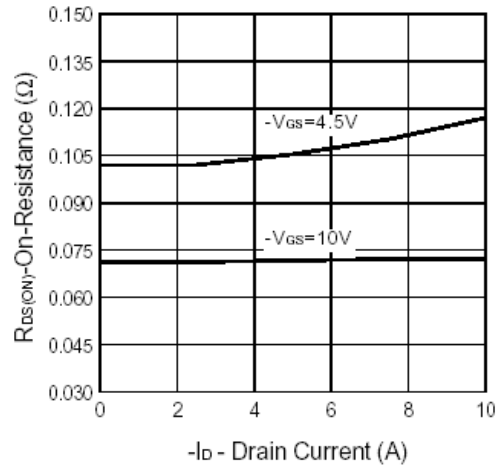
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Total Gate Charge	Qg	$V_{DS} = -10V$		7.6	10	nC
Gate-Source Charge	Qgs	$V_{GS} = -4.5V$		3.2		
Gate-Drain Charge	Qgd	$I_{DS} = -3A$		2		
Turn-on Delay Time	$T_{d(ON)}$	$V_{DD} = -10V, I_{DS} = -1A$		11	22	nS
Turn-on Rise Time	T_r	$V_{GEN} = -4.5V$		32	55	
Turn-off Delay Time	$T_{d(OFF)}$	$R_G = 6 \Omega$		38	68	
Turn-off Rise Time	T_f	$R_L = 6 \Omega$		32	55	
Input Capacitance	Ciss	$V_{DS} = -15V$		430		pF
Output Capacitance	Coss	$V_{GS} = 0V$		235		
Reverse Transfer Capacitance	Crss	$f = 1 \text{ MHz}$		95		

• Typical Performance Characteristics


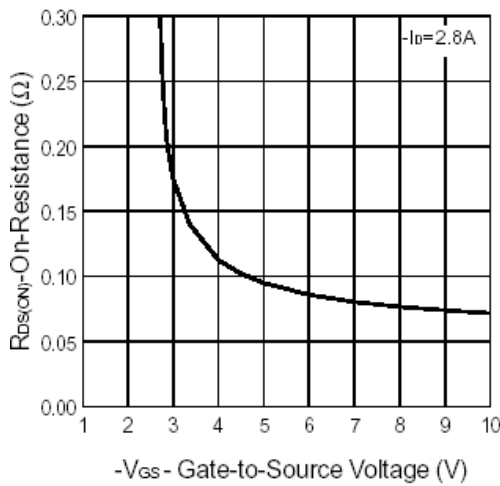
Threshold Voltage vs. Junction Temperature



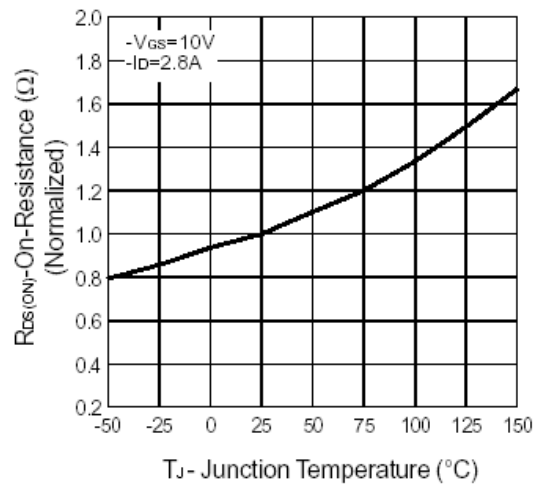
On-Resistance vs. Drain Current



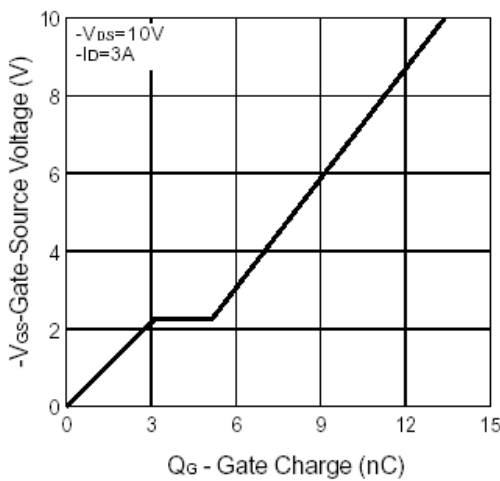
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature



Gate Charge



Capacitance

