



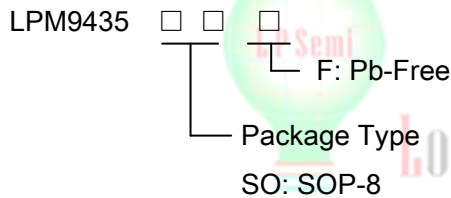
P-Channel Enhancement Mode Field Effect Transistor

General Description

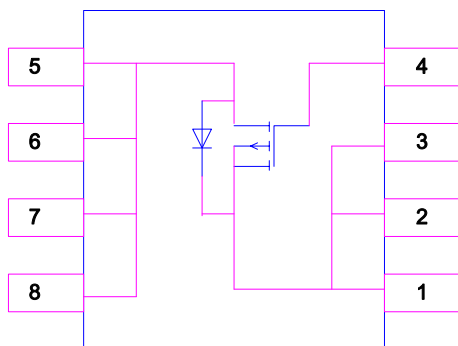
The LPM9435 is the P-channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance.

These devices are particularly suited for low voltage application, notebook computer power management and other battery powered circuits where high side switching.

Order Information



Pin Configurations



Features

- ◆ -30V/-5.8A, $R_{DS(ON)}=42m\Omega(\text{typ.})@V_{GS}=-10V$
- ◆ -30V/-4.0A, $R_{DS(ON)}=65m\Omega(\text{typ.})@V_{GS}=-4.5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ SOP8 Package

Applications

- ◇ Portable Media Players
- ◇ Cellular and Smart mobile phone
- ◇ LCD
- ◇ DSC Sensor
- ◇ Wireless Card

Marking Information

Device	Marking	Package	Shipping
LPM9435	LPM LPM9435 YWX	SOP8	3K/REEL

Pin Description

Pin Number	Pin Description
1,2,3	Source Pin
4	Gate Electrode
5,6,7,8	Drain Electrode



Absolute Maximum Ratings

Symbol	PARAMETER	Ratings	Units
VDSS	Drain-Source Voltage	-30	V
VGSS	Gate-Source Voltage	±20	V
IO	Drain Current – Continuous($T_A=25^\circ\text{C}$)	-5.3	A
		-50	
PO	Power Dissipation for Single Operation($T_A=25^\circ\text{C}$)	2.5	W
TJ,TSTG	Operating and Storage Junction Temperature Range	-55 to +175	°C

Thermal resistance ratings

RθJA	Thermal Resistance, Junction-to-Ambient	50	°C/W
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Electrical Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BVDSS	VGS=0V, IO=-250μA	-30			V
Zero Gate Voltage Drain Current	IOSS	VDS=-24, VGS=0V			-1	μA
Gate-Body Leakage, Forward	IGSSF	VGS=25V, VDS=0V			100	nA
Gate-Body Leakage, Reverse	IGSSR	VGS=-25V, VDS=0V			-100	nA
On Characteristics						
Gate Threshold Voltage	VGS(th)	VDS=VGS, IO=-250μA	-1	-1.7	-3	V
Static Drain-Source On-Resistance	R _{DS(ON)}	VGS=-10V, IO=-5.3A VGS=-4.5V, IO=-4A VGS=-10V, IO=-5.3A, TJ=125°C		42 65 57		mΩ
Forward Transconductance	gFS	VDS=-5V, IO=-5.3A		10		S
Dynamic Characteristics						
Input Capacitance	Ciss	VDS=-15V, VGS=0V F=1.0MHz		528		pF
Output Capacitance	Coss			132		pF
Reverse Transfer Capacitance	Crss			70		pF
Switching Characteristics						
Turn-On Delay Time	Td(on)	VDD=-15V, IO=-1A VGS=-10V, RGEN=6Ω		7	14	ns
Turn-On Rise Time	tr			13	24	ns
Turn-Off Delay Time	Td(off)			14	25	ns
Turn-Off Fall Time	tf			9	17	ns
Total Gata Charge	Qg	VDD=-15V, IO=-4A VGS=-10V,		10	14	nc
Gata Source Charge	Qgs			2.2		nc
Gata Drain Charge	Qgd			2		
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Voltage	IS				-2.1	A
Drain-Source Forward Voltage	VSD	VGS=0V, IS=-2.1A		-0.8	-1.2	V



Typical Operating Characteristics

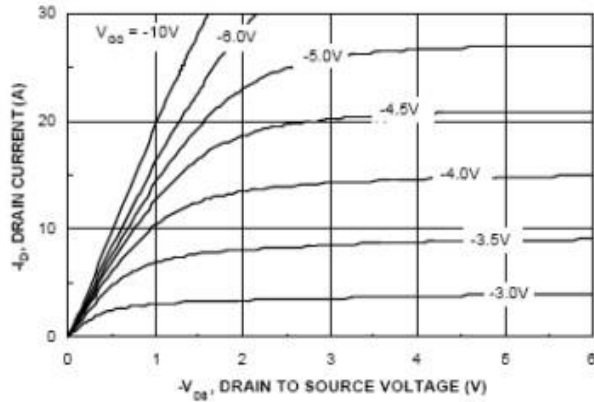


Figure 1. On-Region Characteristics.

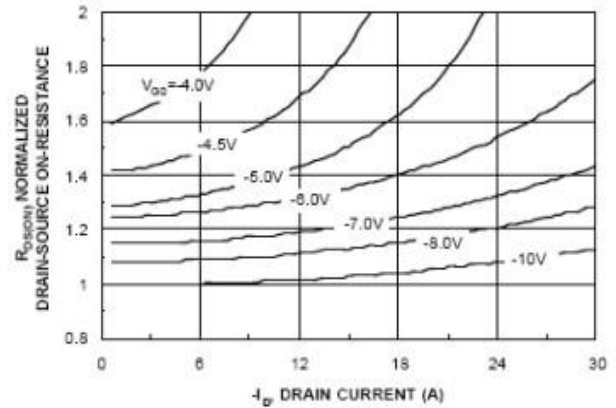


Figure 2. On-Resistance Variation with Drain Current and Gate Voltage.

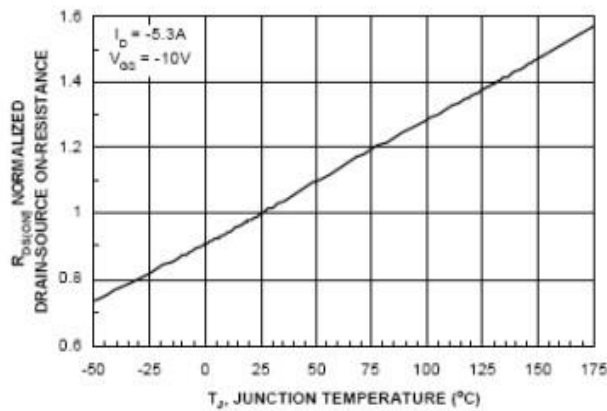


Figure 3. On-Resistance Variation with Temperature.

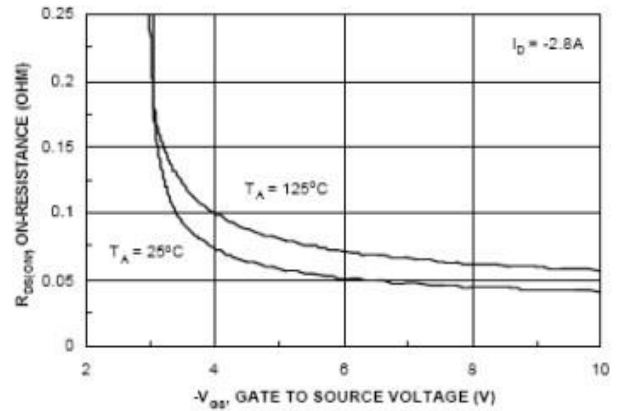


Figure 4. On-Resistance Variation with Gate-to-Source Voltage.

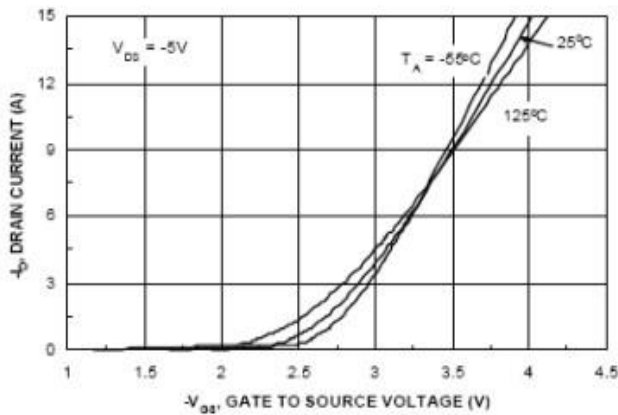


Figure 5. Transfer Characteristics.

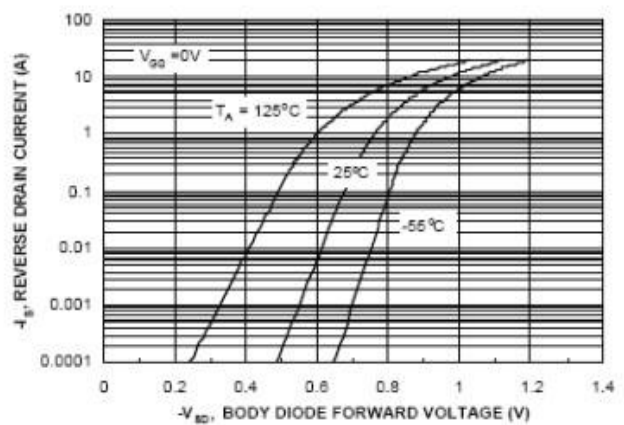


Figure 6. Body Diode Forward Voltage Variation with Source Current and Temperature.

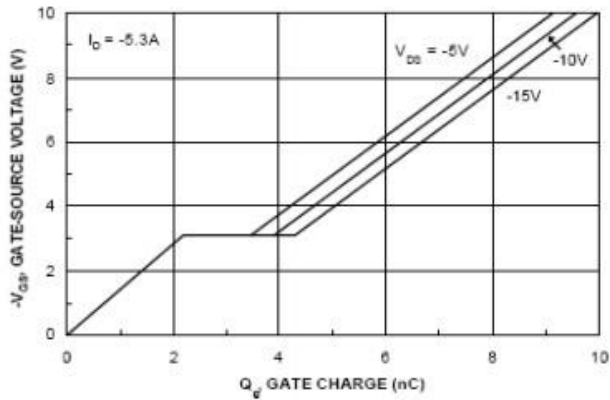


Figure 7. Gate Charge Characteristics.

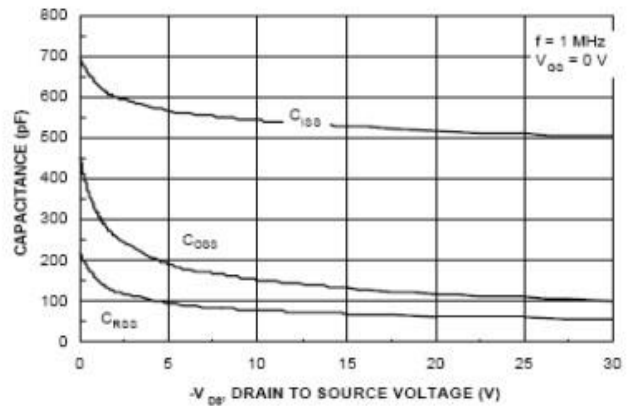


Figure 8. Capacitance Characteristics.

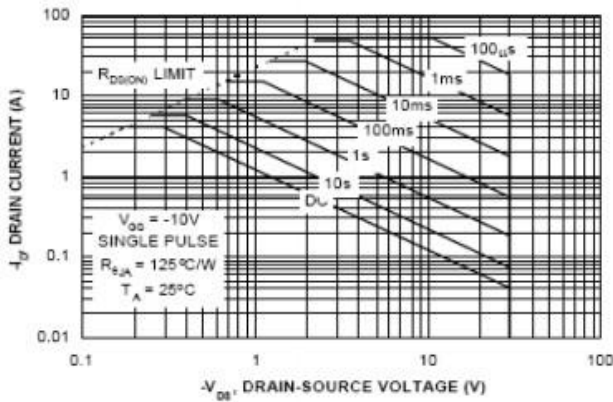


Figure 9. Maximum Safe Operating Area.

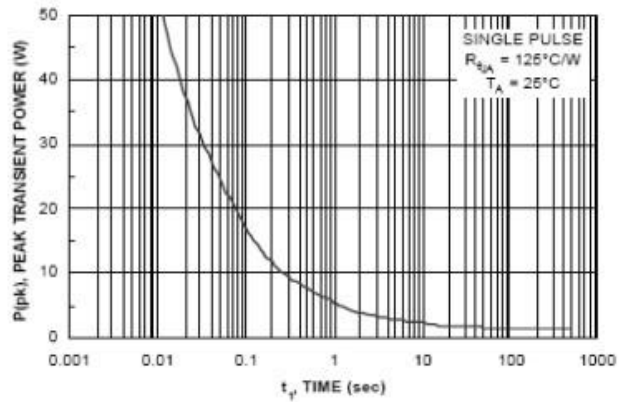


Figure 10. Single Pulse Maximum Power Dissipation.

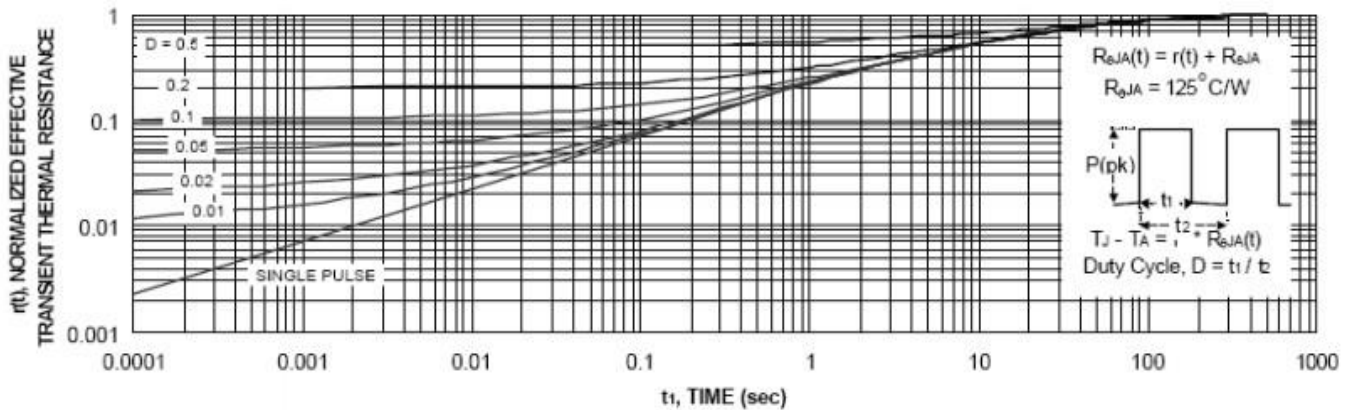
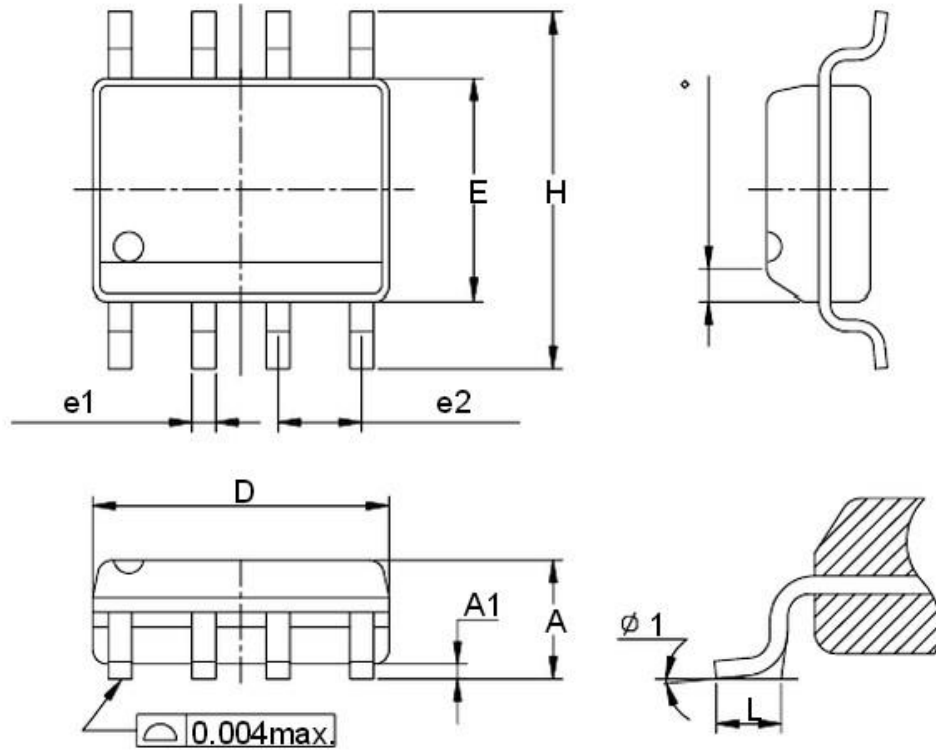


Figure 11. Transient Thermal Response Curve.



Packaging Information



Dim	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.35	1.75	0.053	0.069
A1	0.10	0.25	0.004	0.010
D	4.80	5.00	0.189	0.197
E	3.80	4.00	0.150	0.157
H	5.80	6.20	0.228	0.244
L	0.40	1.27	0.016	0.050
e1	0.33	0.51	0.013	0.020
e2	1.27BSC		0.50BSC	
$\phi 1$	8°		8°	