

N-Channel MOSFET LYM2302 Series

Description:

LYM2302 Series N-channel

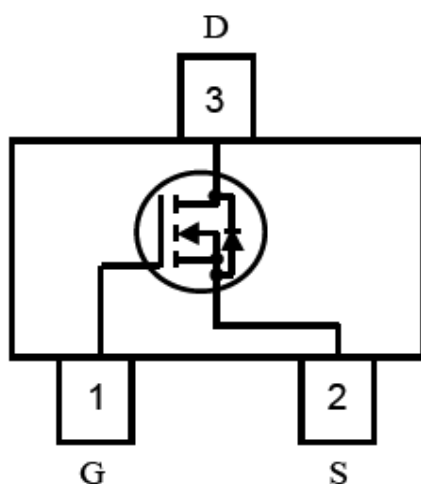
enhancement mode field-effect transistor, produced with high cell density DMOS trench technology, which is especially used to minimize on-state resistance.

This device particularly suits low voltage applications, and low power dissipation in a very small outline surface mount package.

Feature:

- 20V/3A
 $R_{DS(ON)}=29m\Omega@V_{GS}=4.5V, I_D=3A$
 $R_{DS(ON)}=36m\Omega@V_{GS}=2.5V, I_D=2A$
- High Density Cell Design For Ultra Low On-Resistance
- Subminiature surface mount package: SOT23

Pin Configuration:



Typical Application:

- Battery management
- High speed switch
- Low power DC to DC converter

Absolute Maximum Ratings:

Parameter Symbol		Ratings	Unit
Drain-Source Voltage	V_{DSS}	20V	V
Gate-Source Voltage	V_{GSS}	± 8	V
Drain Current	$T_A=25^\circ C$	I_D	3
	$T_A=70^\circ C$		2
Pulsed Drain Current ^{1,2}	I_{DM}	15	A
Total Power Dissipation	$T_A=25^\circ C$	P_d	0.7
	$T_A=70^\circ C$		0.46
operating junction temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	-65/150	$^\circ C$

Thermal Characteristics:

Parameter Symbol		Ratings	Unit
Thermal Resistance, Junction-to-Ambient ³	R θ JA	140	°C/W

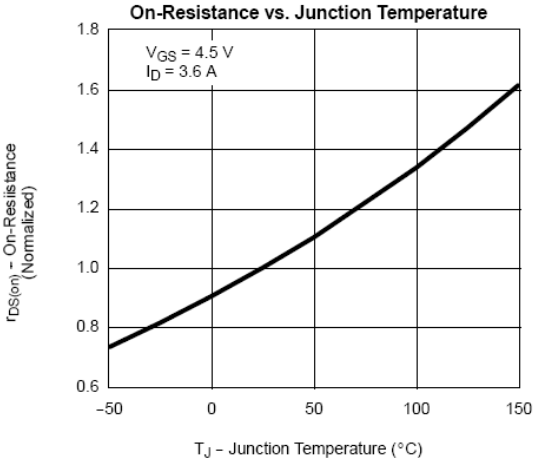
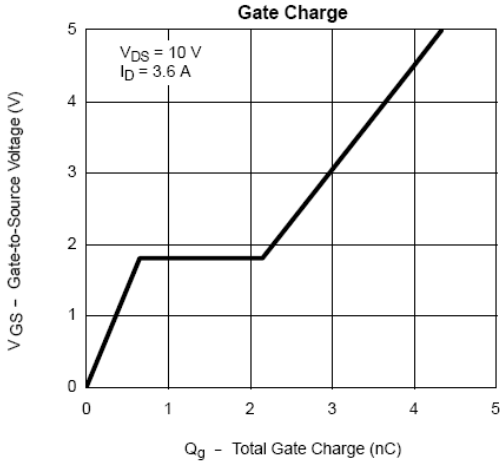
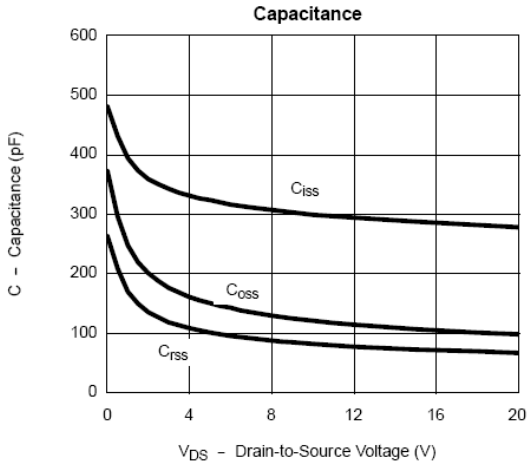
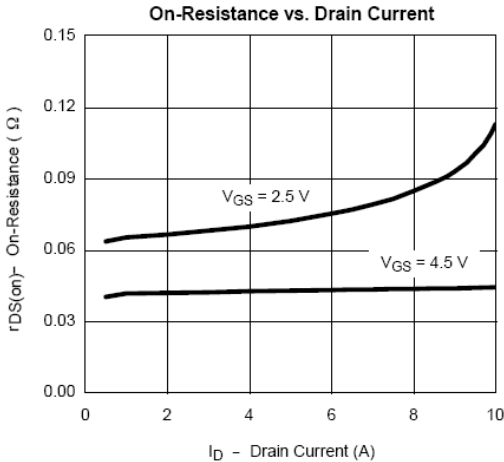
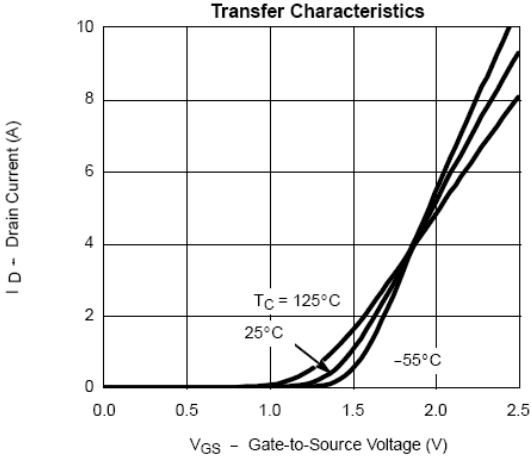
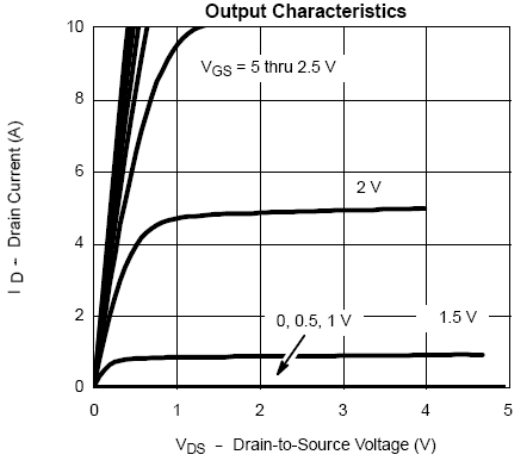
Electrical Characteristics:**LYM2302**

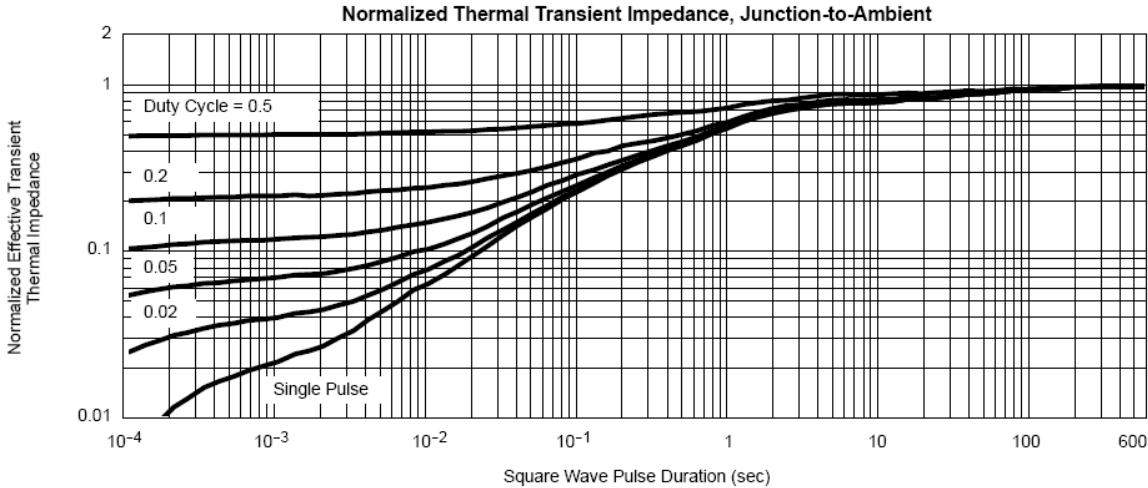
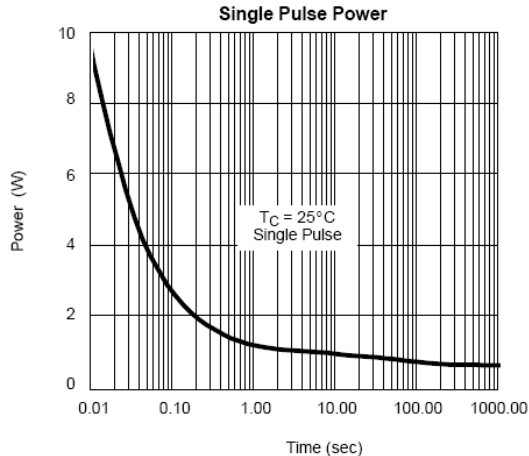
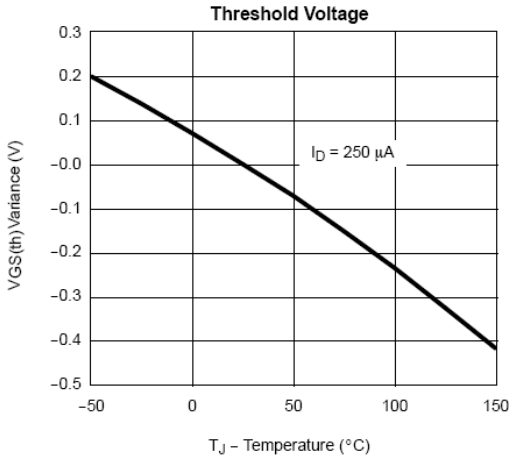
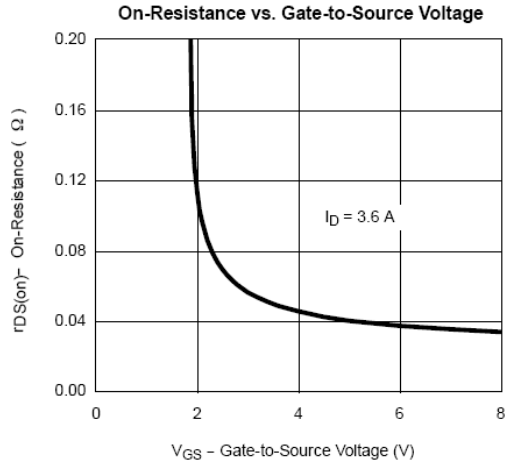
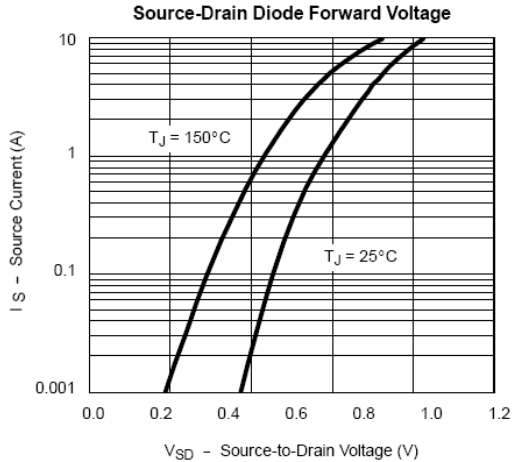
Parameter Symbol		Test Condition Min	Type	Max	Unit	
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250 μ A	20	23	V	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μ A	0.51	0.53	0.85	V
Gate-Body Leakage	I _{GSS}	V _{DS} =0V, V _{GS} =8V		1.6	100	nA
		V _{DS} =0V, V _{GS} =-8V		-0.2	-100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V V _{GS} =0V		6.3	1000	nA
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D =3A		29	50	m Ω
		V _{GS} =2.5V, I _D =2A		36	65	m Ω
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =3.6A		8		S
Source-drain (diode forward) voltage	V _{SD}	V _{GS} =0V, I _D =1.25A	0.4	0.7	1	V
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 10 V, V _{GS} = 0 V, f = 1 MHz		300		pF
Output Capacitance	C _{oss}			120		
Reverse Transfer Capacitance	C _{rss}			80		
Switching Characteristics						
Turn-On Delay Time	td(on)	V _{DD} = 10 V, R _L = 2.8 Ω , I _D \approx 3.6 A, V _{GEN} = 4.5 V, R _g = 6 Ω		8	15	ns
Rise Time	tr			50	80	
Turn-Off Delay Time	td(off)			15	60	
Fall-Time	tf			10	25	
Total Gate Charge	Qg	V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 3.6 A		4	10	nC
Gate-Source Charge	Qgs			0.65		
Gate-Drain Charge	Qgd			1.5		

1、Repetitive rating, pulse width limited by junction temperature.

2、Pulse test; pulse width \leq 300 μ s, duty cycle \leq 2%.

Typical Performance Characteristics:





Package Information:

