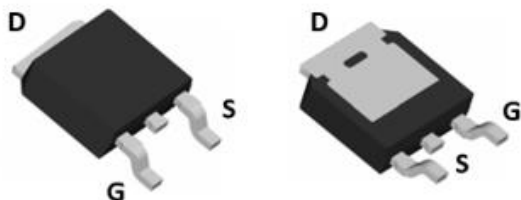
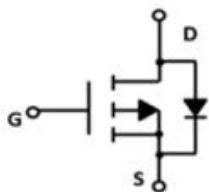




P-Channel Enhancement Mode Power MOSFET



TO-252

**Product Summary**

- V_{DS} -60V
- I_D -25A
- $R_{DS(ON)}$ (at $V_{GS}=-10V$) <42 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <55 mohm
- 100% UIS Tested
- 100% ∇V_{DS} Tested

General Description

- Trench Power LV MOSFET technology
- High density cell design for Low $R_{DS(ON)}$
- High Speed switching

Applications

- High side switch for full bridge converter
- DC/DC converter for LCD display

■ Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	-60	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_C=25^\circ\text{C}$	I_D	-25	A
	$T_C=100^\circ\text{C}$		-18	
Pulsed Drain Current ^A		I_{DM}	-105	A
Total Power Dissipation	$T_C=25^\circ\text{C}$	P_D	62	W
	$T_C=100^\circ\text{C}$		31	
Single Pulse Avalanche Energy ^B		E_{AS}	210	mJ
Thermal Resistance Junction-to-Case ^C		$R_{\theta JC}$	2.4	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~+175	$^\circ\text{C}$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
LMD25P06A	F2	YJD25P06A	2500	2500	25000	13" reel

■ Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =-250μA	-60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V	T _J =25°C		-1	μA
			T _J =55°C		-5	
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-250μA	-0.9	-1.4	-2.0	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D =-15A		31	42	mΩ
		V _{GS} = -4.5V, I _D =-7A		33	55	
Diode Forward Voltage	V _{SD}	I _S =-25A, V _{GS} =0V			-1.2	V
Maximum Body-Diode Continuous Current	I _S				-25	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-30V, V _{GS} =0V, f=1MHZ		3655		pF
Output Capacitance	C _{oss}			355		
Reverse Transfer Capacitance	C _{rss}			301		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-10V, V _{DS} =-30V, I _D =-10A		29.8		nC
Gate-Source Charge	Q _{gs}			4.7		
Gate-Drain Charge	Q _{gd}			10		
Reverse Recovery Charge	Q _{rr}	I _r =-20A, di/dt=-100A/us		21		
Reverse Recovery Time	t _{rr}			40		
Turn-on Delay Time	t _{D(on)}	V _{GS} =-10V, V _{DD} =-30V, I _D =-1A, R _{GEN} =2.5Ω		11		ns
Turn-on Rise Time	t _r			14		
Turn-off Delay Time	t _{D(off)}			35		
Turn-off fall Time	t _f			14		

A. Pulse Test: Pulse Width ≤ 300us, Duty cycle ≤ 2%.

B. T_J=25°C, V_{DS}=50V, V_{DD}=50V, V_{GS}=10V, L=0.5mH.

C. R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case thermal reference is defined as the solder mounting surface of the drain pins. R_{θJC} is guaranteed by design, while R_{θJA} is determined by the board design. The maximum rating presented here is based on mounting on a 1 in 2 pad of 2oz copper.

■ Typical Performance Characteristics

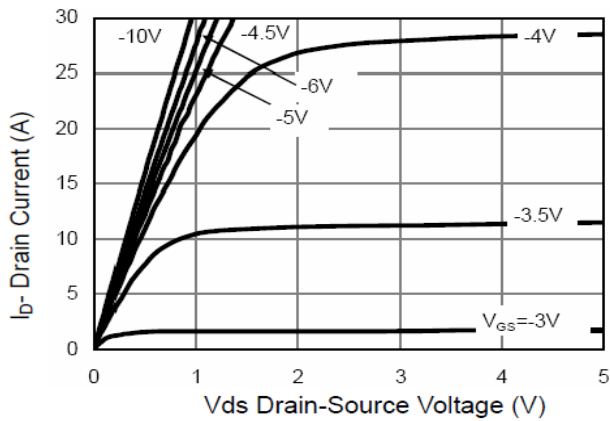


Figure1. Output Characteristics

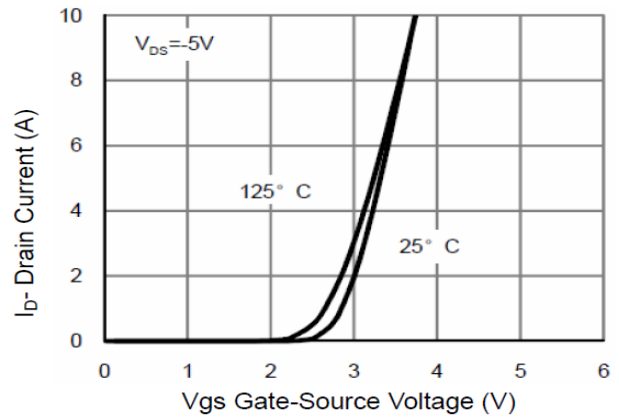


Figure2. Transfer Characteristics

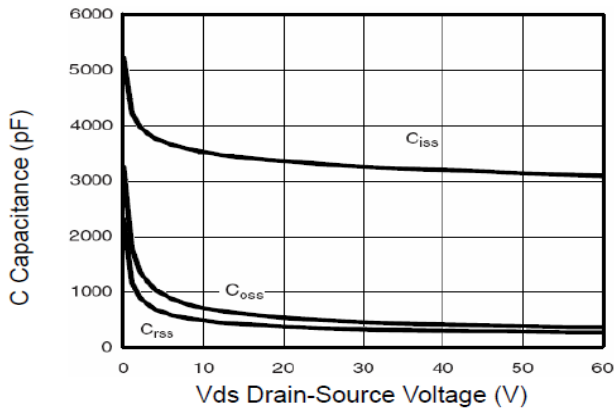


Figure3. Capacitance Characteristics

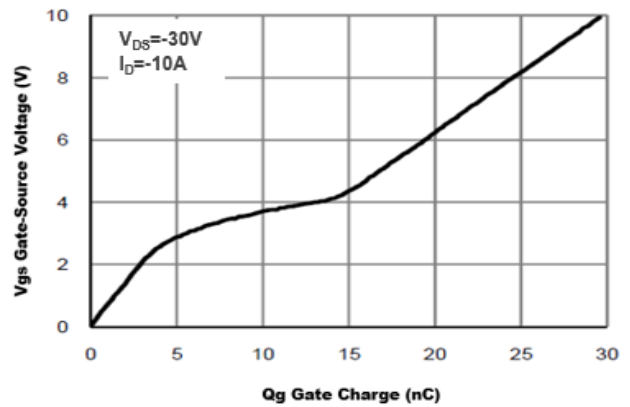


Figure4. Gate Charge

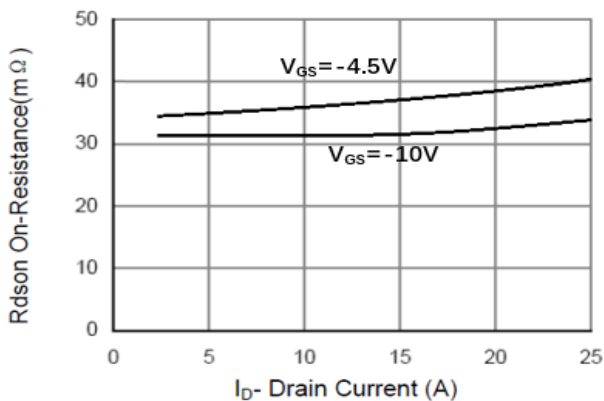


Figure5. Drain-Source on Resistance

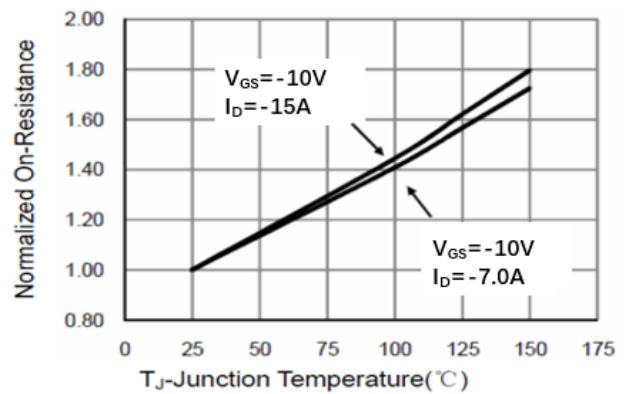


Figure6. Drain-Source on Resistance

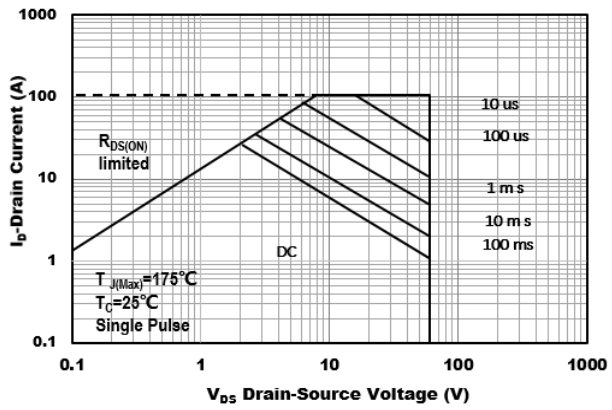


Figure7. Safe Operation Area

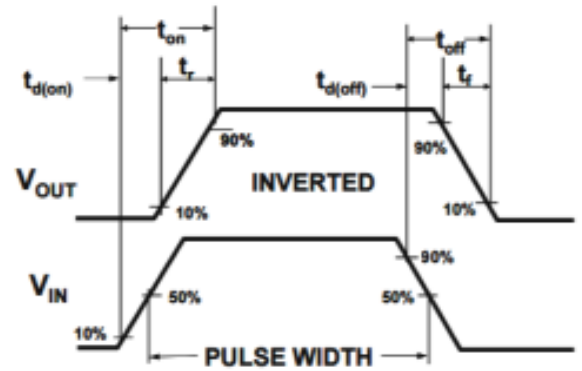
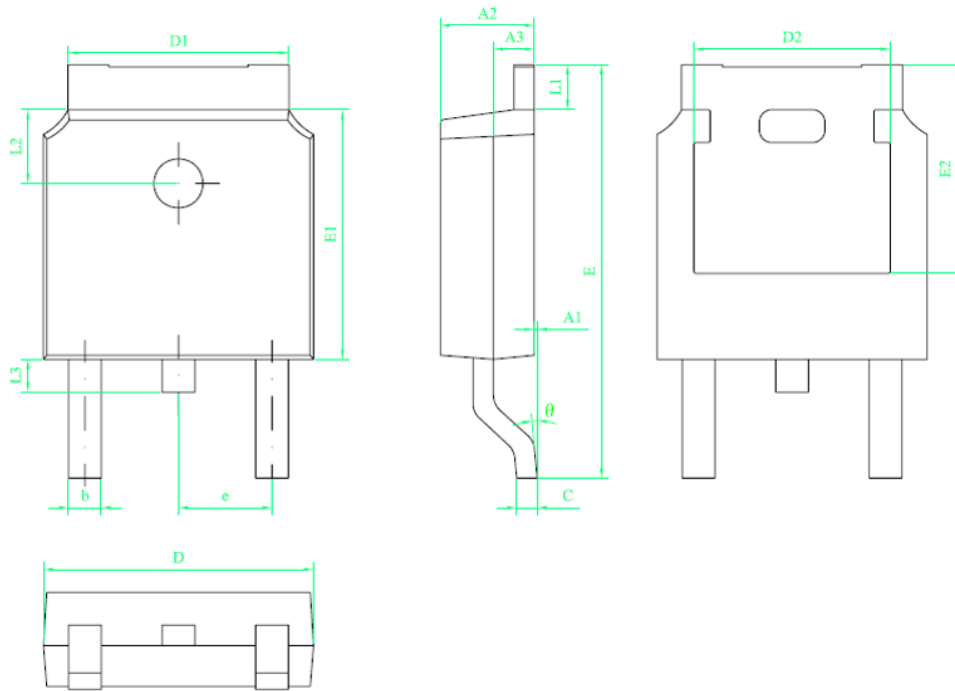


Figure8. Switching wave

■ TO-252 Package information



符号	尺寸		
	min	nom	max
A1	0	---	0.10
A2	2.20	2.30	2.40
A3	0.90	1.00	1.10
b	0.75	---	0.85
c	0.50	---	0.60
D	6.50	6.60	6.70
D1	5.30	5.40	5.50
D2	4.70	4.80	4.90
E	9.90	10.10	10.30
E1	6.00	6.10	6.20
E2	5.20	5.30	5.40
e	2.20	2.286	2.40
L1	0.90	---	1.25
L2	1.70	1.80	1.90
L3	0.60	0.80	1.00
θ	0°	---	8°

技术要求:

1. 树脂体不应有崩裂、缺损等缺陷;
2. 树脂上下部X、Y方向偏差不得超过0.20;
3. 胶体两端留胶总宽和宽度不超过0.50;
4. 所有单位为mm;