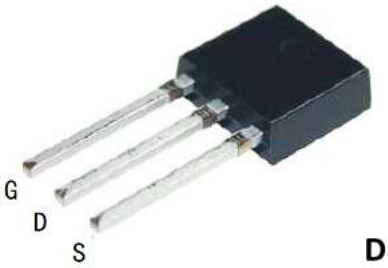
Leiditech

LMU60R840A

N-Channel Super Junction Power MOSFET



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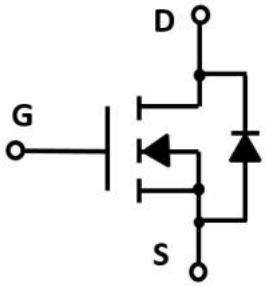


Product Summary

- V_{DS} 600V
- I_D 5A
- $R_{DS(ON)}$(at V_{GS}=10V) ＜840 mohm
- 100% UIS Tested
- 100% ▽V_{DS} Tested

General Description

- Multi-EPI Super Junction MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$

Applications

- Power factor correction(PFC)
- Switched mode power supplies(SMPS)
- Uninterruptible Power Supply(UPS)

■ Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	600	V
Gate-source Voltage		V_{GS}	±30	V
Drain Current	T_C=25℃	I_D	5	A
	T_C=100℃		3	
Pulsed Drain Current [A]		I_{DM}	45	A
Avalanche energy, Single pulse [B]		E_{AS}	624	mJ
Avalanche energy, repetitive		E_{AR}	150	mJ
MOSFET dv/dt ruggedness		dv/dt	11	V/ns
Reverse diode dv/dt, VDS=0…480 V, I_{SD}≤I_D		dv/dt	15	V/ns
Total Power Dissipation	T_C=25℃	P_D	69	W
	T_C=100℃		28	
Thermal Resistance Junction-to-Case		$R_{\theta JC}$	1.06	℃/ W
Junction and Storage Temperature Range		T_J ,T_{STG}	-55～+150	℃

■ Ordering Information

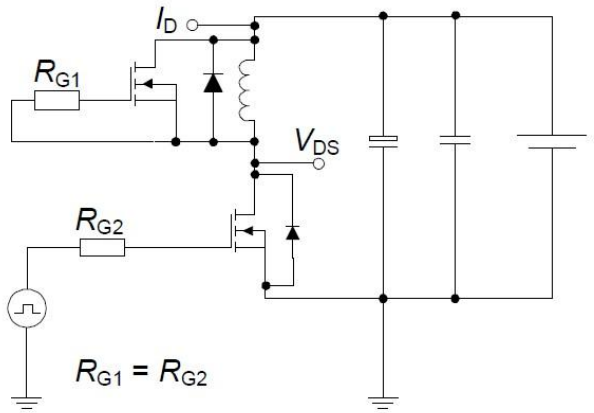
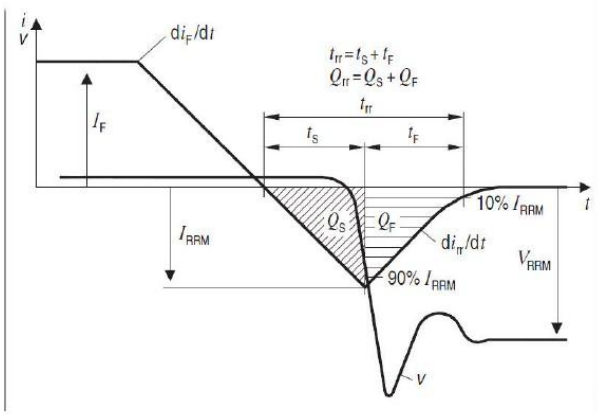
PREFERED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
LMU60R840A		YJU60R840A	75	4950	29700	Tube

■ Electrical Characteristics (T_J=25℃ unless otherwise noted)

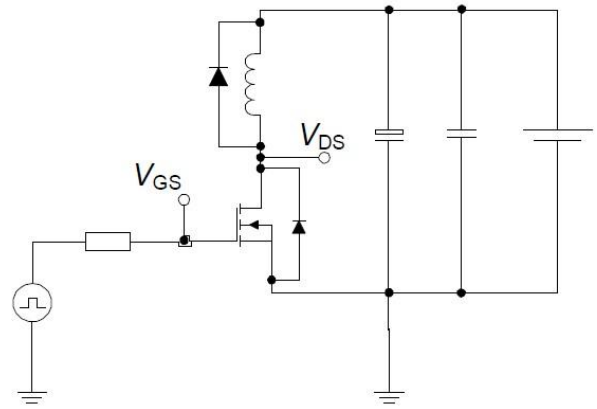
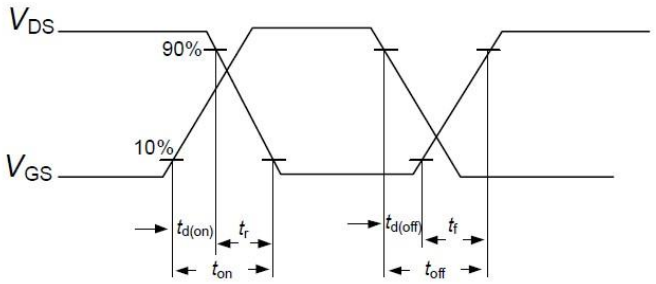
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=1mA	600			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=600V,V_{GS}=0V			0.1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±30V, V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=250μA	2.8		4.2	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}= 10V, I_D=2.5A		750	840	mΩ
Diode Forward Voltage	V_{SD}	I_S=3.8A,V_{GS}=0V		0.81		V
Maximum Body-Diode Continuous Current	I_S				8	A
Gate resstance(Intrinsic)	R_G	F=1MHz,open drain		12.1		Ω
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=50V,V_{GS}=0V,f=10KHZ		550		pF
Output Capacitance	C_{oss}			39		
Reverse Transfer Capacitance	C_{rss}			2.8		
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=13V,V_{DS}=400V,I_D=2.5A		2.0		nC
Gate-Source Charge	Q_{gs}			2.6		
Gate-Drain Charge	Q_{gd}			10.7		
Reverse Recovery Chrage	Q_{rr}	V_R=400A ,I_F=2.2A, di/dt=100A/us		880		
Peak reverse recovery current	I_{rrm}			10		A
Reverse Recovery Time	t_{rr}			125		ns
Turn-on Delay Time	$t_{D(on)}$	V_{DD}=400V,R_G=10Ω, I_D=2.5A		27		
Turn-on Rise Time	t_r			31		
Turn-off Delay Time	$t_{D(off)}$			41		
Turn-off fall Time	t_f			29		

■Test Circuits

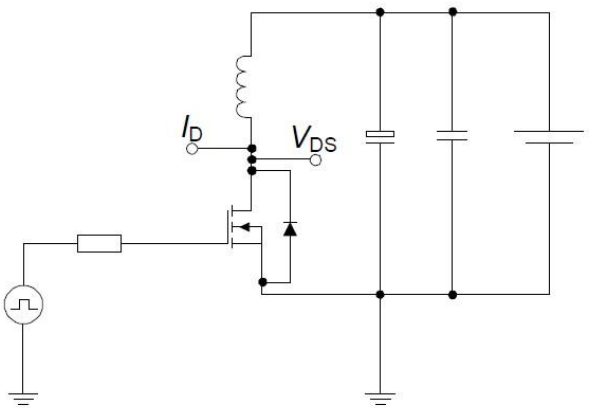
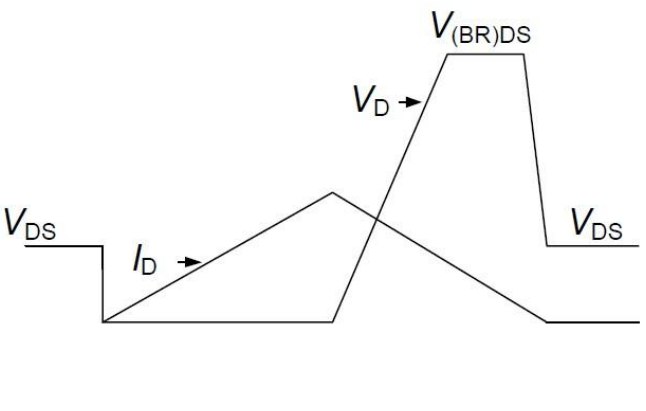
Diode characteristics

Test circuit for diode characteristics	Diode recovery waveform
	

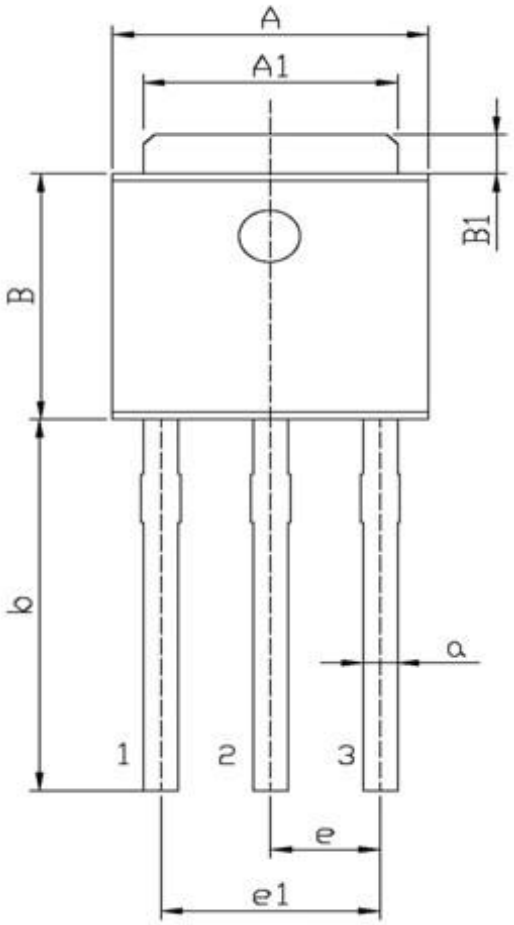
Switching times

Switching times test circuit for inductive load	Switching times waveform
	

Unclamped inductive load

Unclamped inductive load test circuit	Unclamped inductive waveform
	

■ TO-251 Package information



单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	6.45	6.75	a	0.50	0.70
A1	5.10	5.50	b	9.00	9.40
B	5.95	6.25	c	0.45	0.55
B1	0.95	1.25	c1	0.45	0.55
C	2.20	2.40	e	2.24	2.34
C1	0.95	1.15	e1	4.43	4.73

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