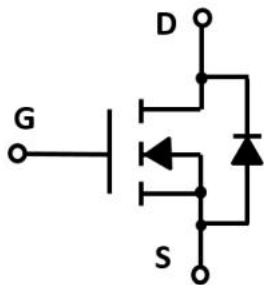


N-Channel Super Junction Power MOSFET



TO-251



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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	600	V
Gate-source Voltage		V_{GS}	± 30	V
Drain Current	$T_C=25^\circ\text{C}$	I_D	5	A
	$T_C=100^\circ\text{C}$		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, $V_{DS}=0\sim 480\text{ V}$, $I_{SD}\leq I_D$		dv/dt	15	V/ns
Total Power Dissipation	$T_C=25^\circ\text{C}$	P_D	69	W
	$T_C=100^\circ\text{C}$		28	
Thermal Resistance Junction-to-Case		$R_{\theta JC}$	1.06	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~+150	$^\circ\text{C}$

■ Ordering Information

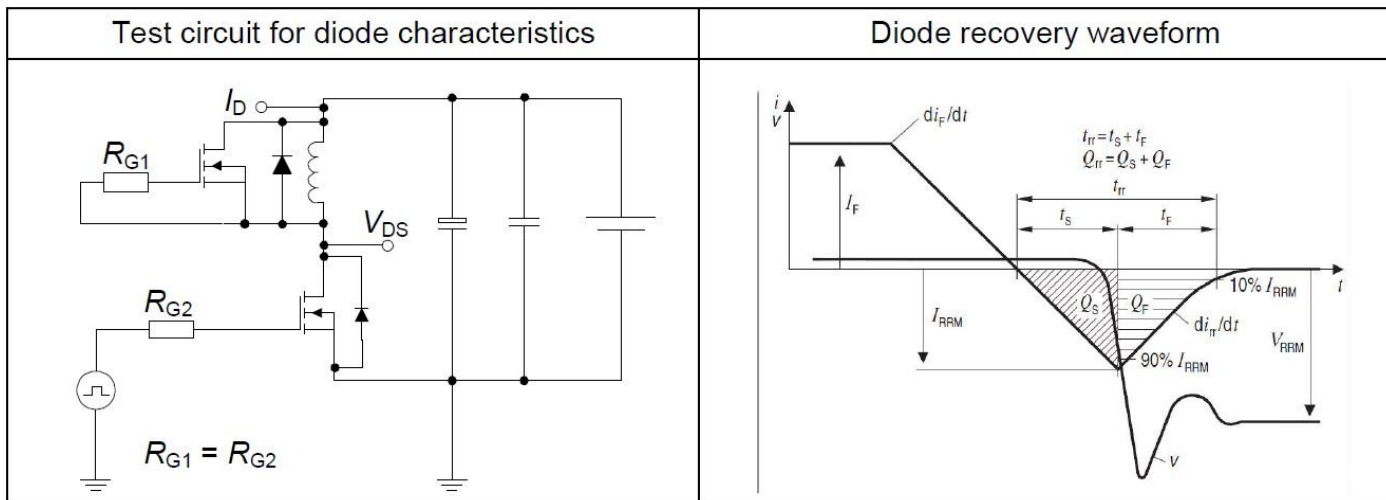
PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
LMU60R840A		YJU60R840A	75	4950	29700	Tube

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

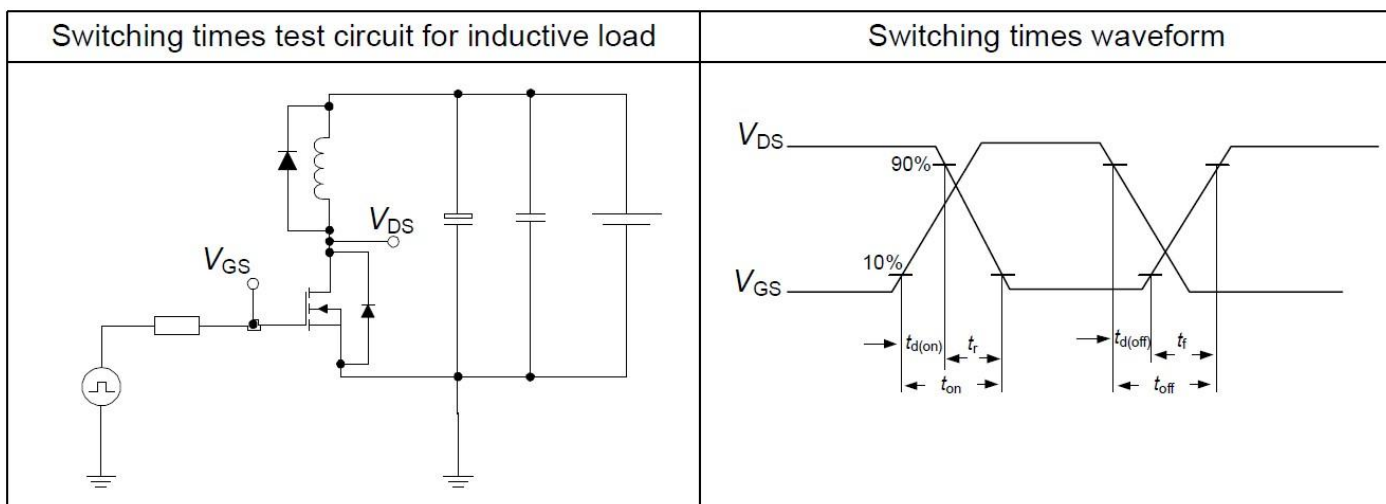
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =1mA	600			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =600V, V _{GS} =0V			0.1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ± 30V, V _{DS} =0V			± 100	nA
Gate Threshold 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		A
Peak reverse recovery current	I _{rrm}			10		
Reverse Recovery Time	t _{rr}			125		
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

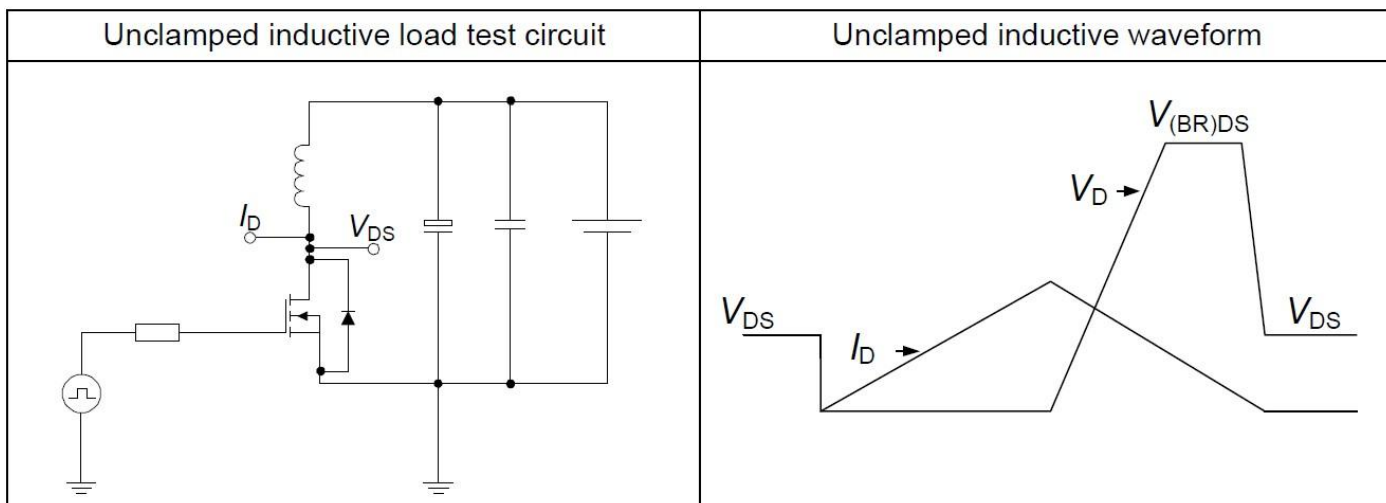
Diode characteristics



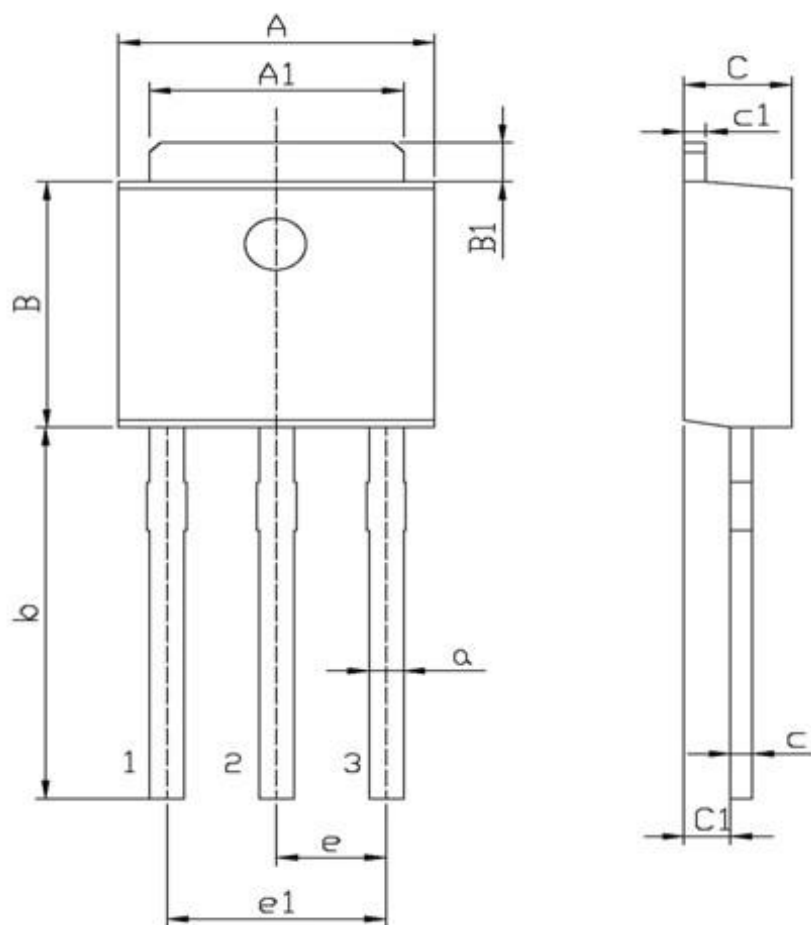
Switching times



Unclamped inductive load



■ 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