

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	75mΩ@10V	10A
	85mΩ@4.5V	

Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% UIS Tested

Application

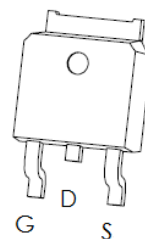
- Power Switching Application

MARKING:

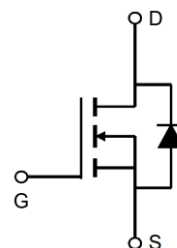


M750N06L = Device Code
 XX = Date Code
 Solid Dot = Green Indicator

TO-252-2L



Schematic diagram



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

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	60	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current ¹	$T_C = 25^\circ\text{C}$	I_D	10	A
	$T_C = 100^\circ\text{C}$	I_D	8	A
Pulsed Drain Current ²		I_{DM}	40	A
Single Pulsed Avalanche Current ³		I_{AS}	11	A
Single Pulsed Avalanche Energy ³		E_{AS}	6	mJ
Power Dissipation ⁵	$T_C = 25^\circ\text{C}$	P_D	25	W
Thermal Resistance from Junction to Ambient ⁶		$R_{\theta JA}$	50	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case		$R_{\theta JC}$	5	$^\circ\text{C/W}$
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^\circ\text{C}$

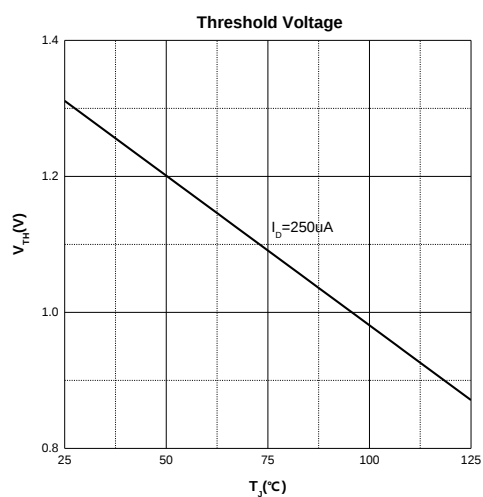
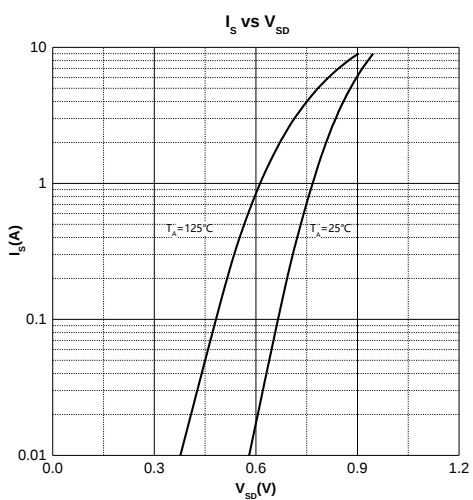
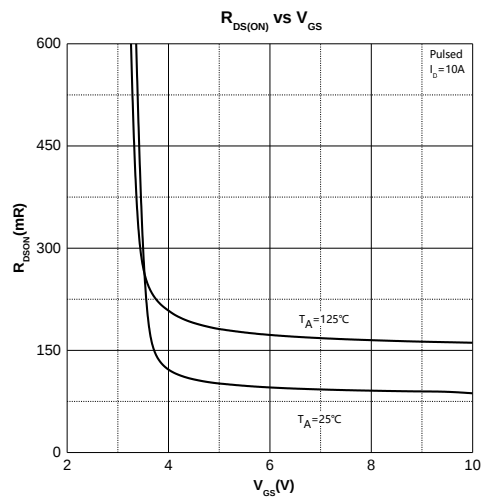
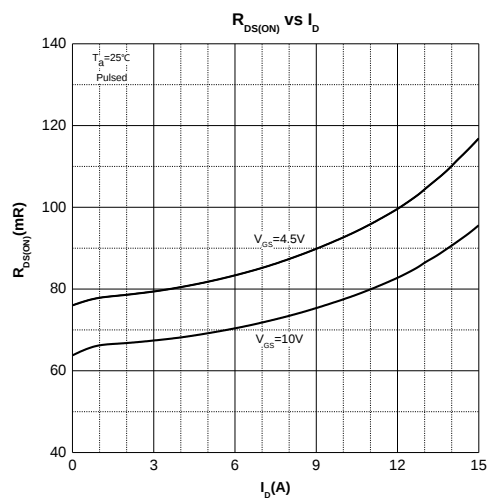
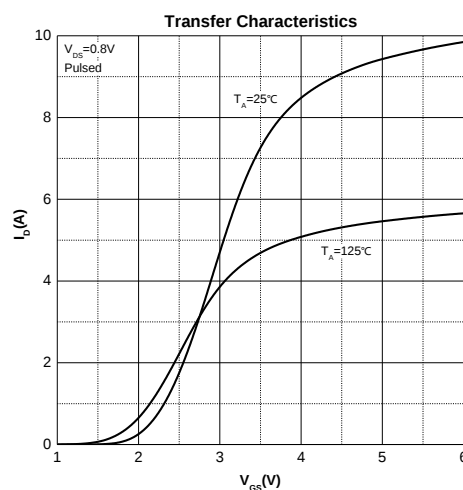
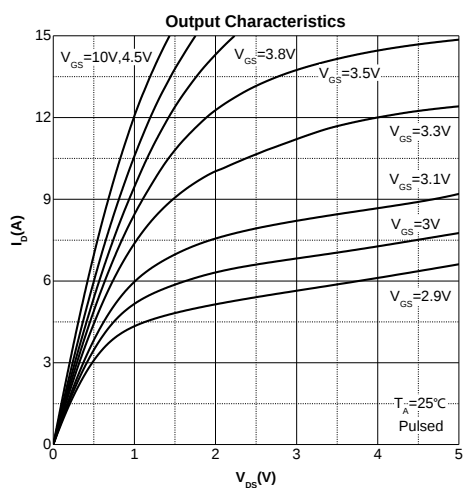
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

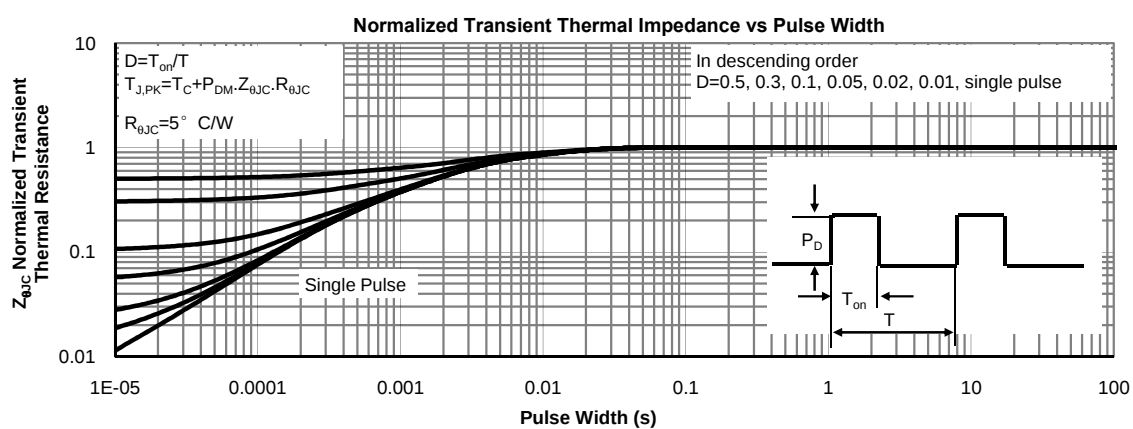
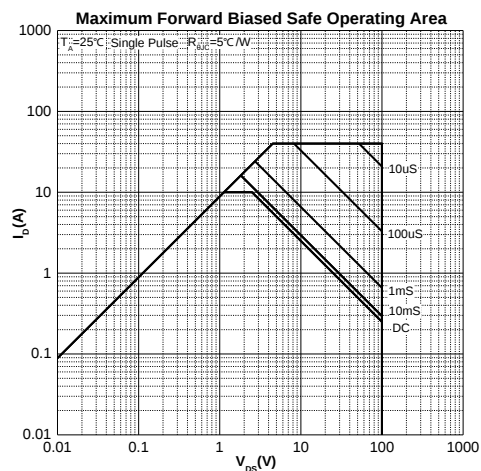
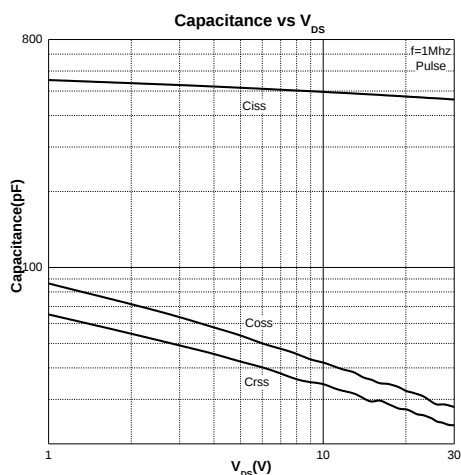
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 60V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics ⁴						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.5	1.3	2.0	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 10A		75	95	mΩ
		V _{GS} = 4.5V, I _D = 7A		85	110	
Forward Transconductance	g _{FS}	V _{DS} = 5V, I _D = 5A		14		S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 30V, V _{GS} = 0V, f = 1MHz		457		pF
Output Capacitance	C _{oss}			27		
Reverse Transfer Capacitance	C _{rss}			23		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		2.7		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = 30V, V _{GS} = 10V, I _D = 3A		10.4		nC
Gate-source Charge	Q _{gs}			1.8		
Gate-drain Charge	Q _{gd}			2.1		
Turn-on Delay Time	t _{d(on)}	V _{DD} = 30V, V _{GS} = 10V, R _L = 0.75Ω R _G = 3Ω		7		ns
Turn-on Rise Time	t _r			3		
Turn-off Delay Ttime	t _{d(off)}			18		
Turn-off Fall Time	t _f			3		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	V _{SD}	V _{GS} = 0V, I _S = 10A			1.2	V
Diode Reverse Recovery Time	t _{rr}	I _F = 5A, dI/dt = 500A/ms		15		ns
Diode Reverse Recovery Charge	Q _{rr}	I _F = 5A, dI/dt = 500A/ms		52		nC

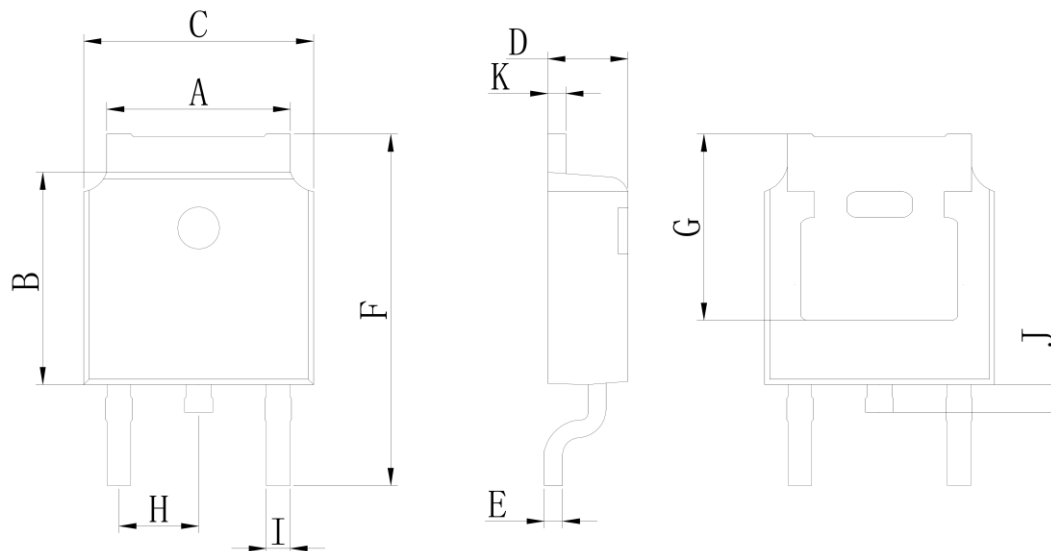
Notes :

- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.EAS condition: $V_{DD} = 30V, V_{GS} = 10V, L = 0.1mH, R_G = 25\Omega$ Starting $T_J = 25^\circ\text{C}$.
- 4.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 5.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.And device mounted on a large heatsink
- 6.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics





TO-252-2L Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	5.050	5.650	0.199	0.222
B	5.800	6.400	0.228	0.252
C	6.250	6.850	0.246	0.270
D	2.200	2.400	0.087	0.094
E	0.400	0.600	0.016	0.024
F	9.710	10.310	0.382	0.406
G	5.050	5.650	0.199	0.222
H	2.100	2.500	0.083	0.098
I	0.700	0.900	0.028	0.035
J	0.500	0.900	0.020	0.035
K	0.400	0.600	0.016	0.024