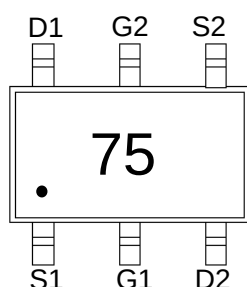


Features

- High-Side Switching
- Low Threshold
- Fast Switching Speed
- ESD Protected

Application

- Load/ Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

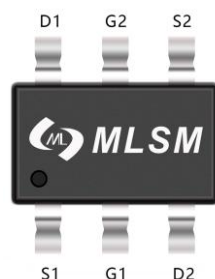


75 : Device code

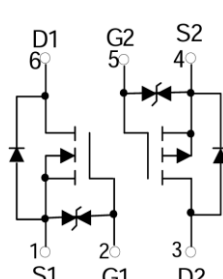
Marking and pin assignment

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
60V	1.6Ω@10V	0.34A
	2.1Ω@4.5V	
-50V	4.1Ω@-10V	-0.18A
	5.5Ω@-5V	



SOT-363 top view



Schematic diagram



Pb-Free



Halogen-Free

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	N-Channel	P-Channel	Unit
--------	-----------	-----------	-----------	------

Common Ratings (TC=25°C Unless Otherwise Noted)

V_{DS}	Drain-Source Breakdown Voltage	60	-50	V
V_{GS}	Gate-Source Voltage	±20	±20	V
T_J	Maximum Junction Temperature	150	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	-55 to 150	°C
I_S	Diode Continuous Forward Current	0.34	-0.18	A
	$T_C=25^{\circ}\text{C}$			

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^{\circ}\text{C}$	1.36	-0.7	A
I_D	Continuous Drain Current	$T_C=25^{\circ}\text{C}$	0.34	-0.18	A
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		833	833	°C/W
E_{SD}	Gate-Source ESD Rating (HBM, Method 3015)		2000	-2000	V

Ordering Information (Example)

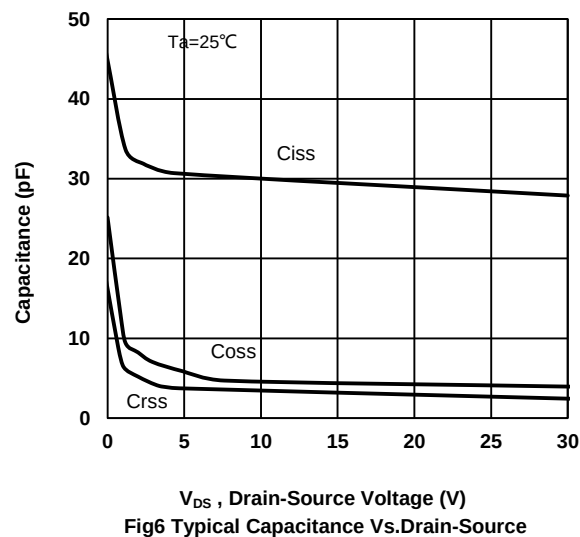
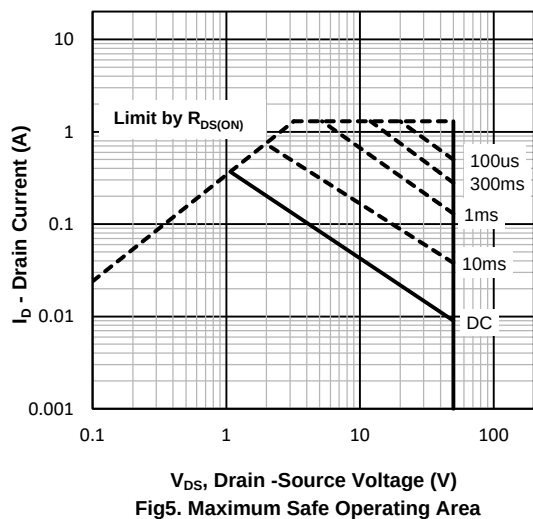
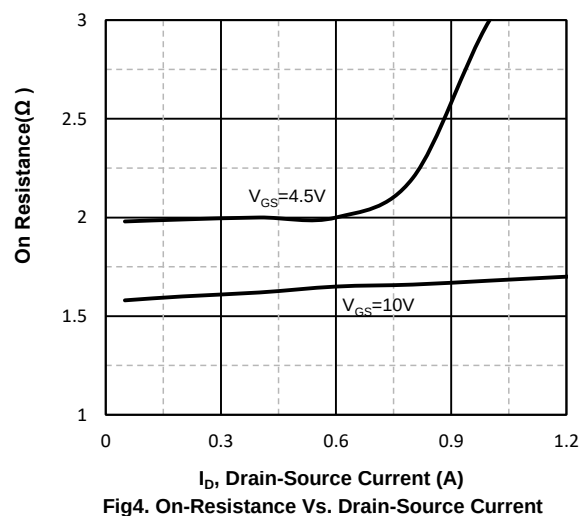
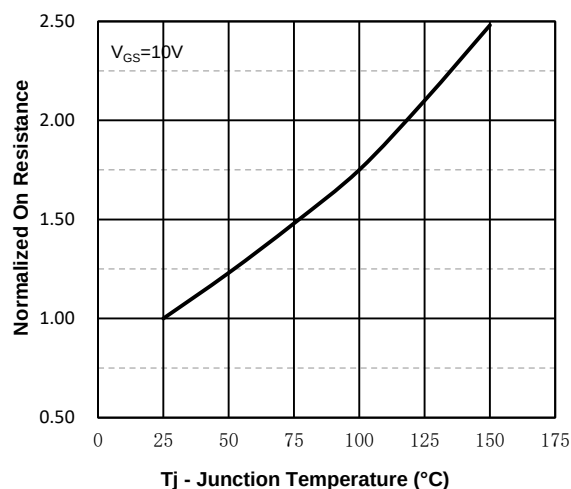
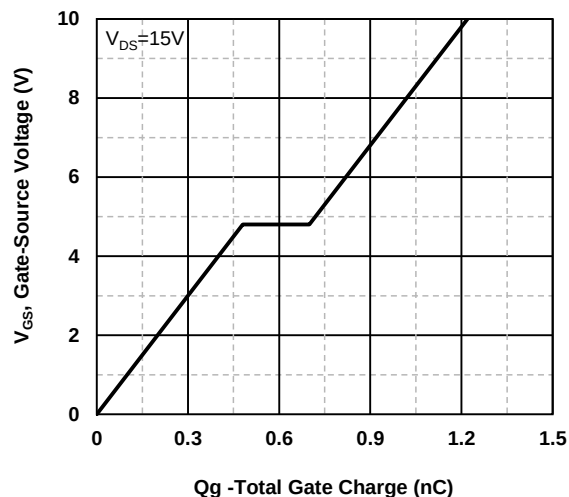
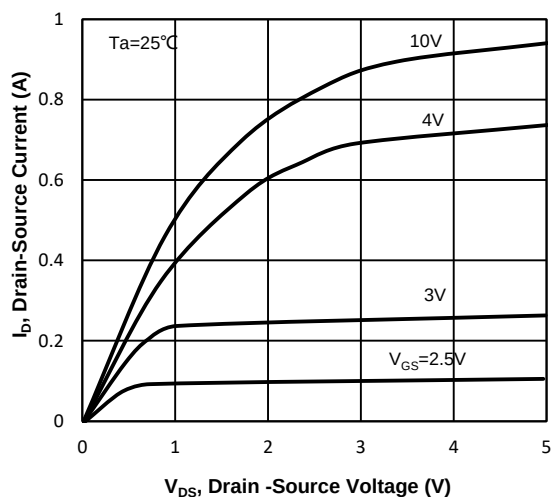
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLS7252KDW	SOT-363	75	3,000	45,000	180,000	7"reel

N-Ch Electrical Characteristics (TJ=25°C unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	60	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =60V, V _{GS} =0V	--	--	1.0	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	--	--	±10	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	1.0	1.5	2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =0.5A	--	1.6	5.0	Ω
		V _{GS} =4.5V, I _D =0.3A	--	2.1	5.3	Ω
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz	--	27	--	pF
C _{OSS}	Output Capacitance		--	9	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	4	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =30V, I _D =0.34A, V _{GS} =10V	--	1.2	--	nC
Q _{gs}	Gate-Source Charge		--	0.5	--	nS
Q _{gd}	Gate-Drain Charge		--	0.2	--	nS
t _{D(on)}	Turn-on Delay Time	V _{DS} =30V, I _D =0.34A, V _{GS} =10V, R _{GEN} =2.3Ω	--	7	--	nS
t _r	Turn-on Rise Time		--	19	--	nS
t _{d(off)}	Turn-Off Delay Time		--	20	--	nS
t _f	Turn-Off Fall Time		--	84	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25°C, Is=0.34A	--	--	1.2	V

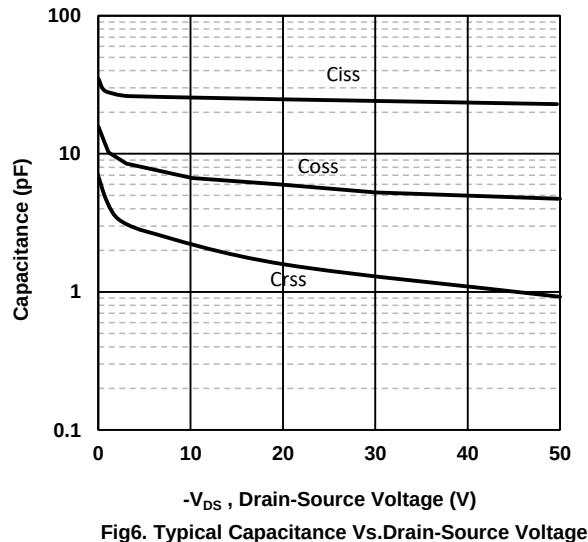
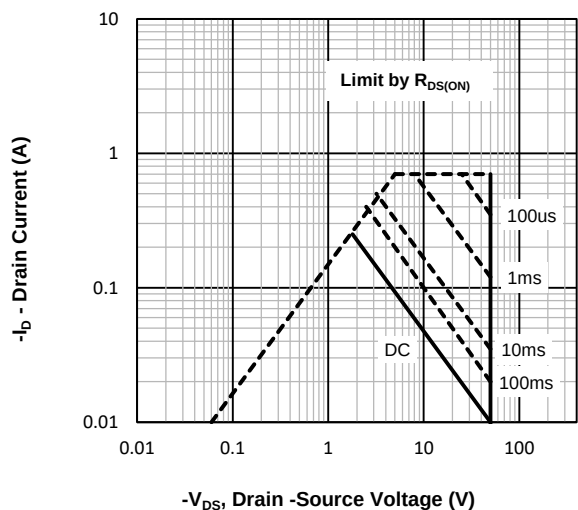
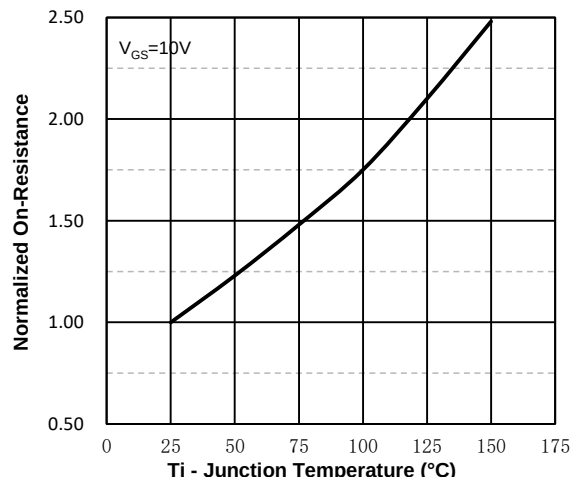
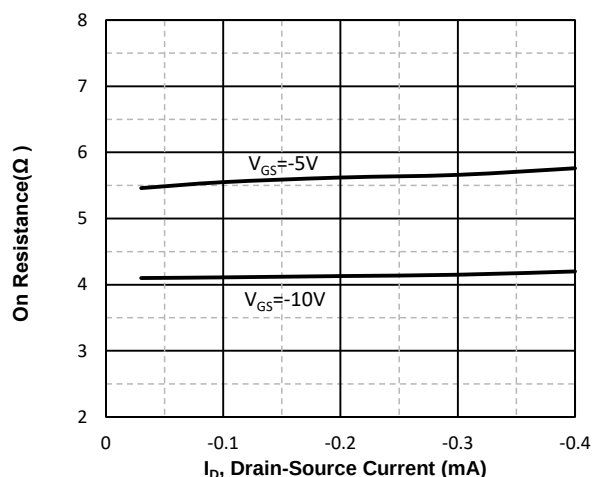
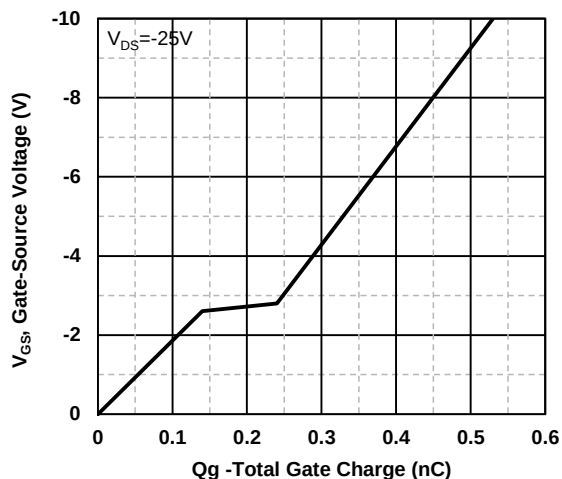
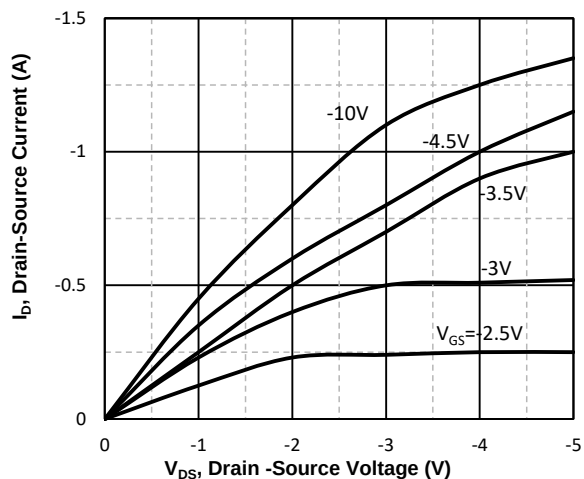


P-Ch Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-50	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-50V, V _{GS} =0V	--	--	-1.0	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	--	--	±10	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-0.9	-1.5	-2.0	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-0.1A	--	4.1	5.0	Ω
		V _{GS} =-5V, I _D =-0.1A	--	5.5	10.0	Ω
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =-30V, V _{GS} =0V, f=1MHz	--	25.2	--	pF
C _{OSS}	Output Capacitance		--	6	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	1.5	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DD} =-30V, I _D =-0.18A, V _{GS} =-10V	--	0.5	--	nC
Q _{gs}	Gate Source Charge		--	0.15	--	nC
Q _{gd}	Gate Drain Charge		--	0.1	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =-30V, I _D =-0.18A, V _{GS} =-10V, R _G =3.3Ω	--	1.5	--	nS
t _r	Turn-on Rise Time		--	5.2	--	nS
t _{d(off)}	Turn-Off Delay Time		--	12	--	nS
t _f	Turn-Off Fall Time		--	6	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=-0.18A	--	--	-1.2	V

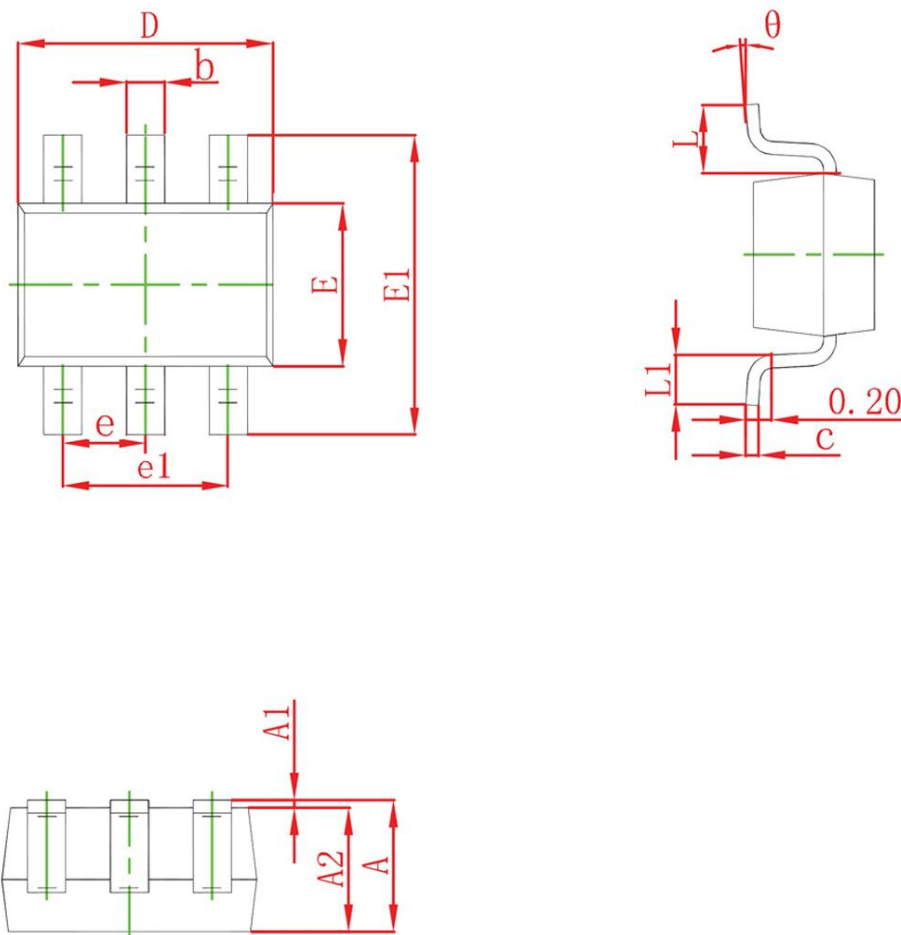
N-Ch Typical Operating Characteristics



P-Ch Typical Operating Characteristics



SOT-363 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525REF		0.021REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°