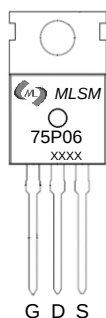


Features

- Low $R_{DS(on)}$ & FOM
- 100% avalanche tested
- Improved dv/dt capability
- Fast switching and soft recovery

Application

- Power switch circuit of POWER
- Uninterruptible Power Supply (UPS)
- Power Factor Correction (PFC)



75P06: Device code
XXXX : Code

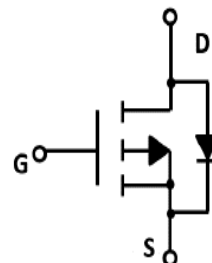
Marking and pin assignment

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
-60V	15mΩ@-10V	-75A



TO-220 top view



Schematic diagram



Pb-Free



Halogen-Free

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

Symbol	Parameter	Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)			
V_{DS}	Drain-Source Breakdown Voltage	-60	V
V_{GS}	Gate-Source Voltage	±20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 155	°C
I_S	Diode Continuous Forward Current	$T_C=25^{\circ}C$ -75	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^{\circ}C$ -260	A
I_D	Continuous Drain Current	$T_C=25^{\circ}C$ -75	A
P_D	Maximum Power Dissipation	$T_C=25^{\circ}C$ 200	W
R_{thJA}	Thermal Resistance Junction-Ambient	62	°C/W
E_{AS}	Single Pulse Avalanche Energy ^{Note1}	930	mJ

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLSY75P06	TO-220	75P06	50	1,000	5,000	/

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	-60	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-60V, V _{GS} =0V	--	--	-25	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-2.0	--	-4.0	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-38A	--	15	20	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V, f=1MHz	--	3400	--	pF
C _{OSS}	Output Capacitance		--	1400	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	640	--	pF
Q _g	Total Gate Charge	V _{DD} =-44V, I _D =-38A, V _{GS} =-10V	--	180	--	nC
Q _{gs}	Gate Source Charge		--	32	--	nC
Q _{gd}	Gate Drain Charge		--	86	--	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DS} =-28V, I _D =-38A, R _G =2.5Ω	--	18	--	nS
t _r	Turn-on Rise Time		--	99	--	nS
t _{d(off)}	Turn-Off Delay Time		--	61	--	nS
t _f	Turn-Off Fall Time		--	96	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=-38A	--	--	-1.6	V

Note :

1、EAS Test condition : $V_{DD}=50V, V_{GS}=10V, R_G=25\Omega$, Starting $T_J=25^\circ C$.

Typical Operating Characteristics

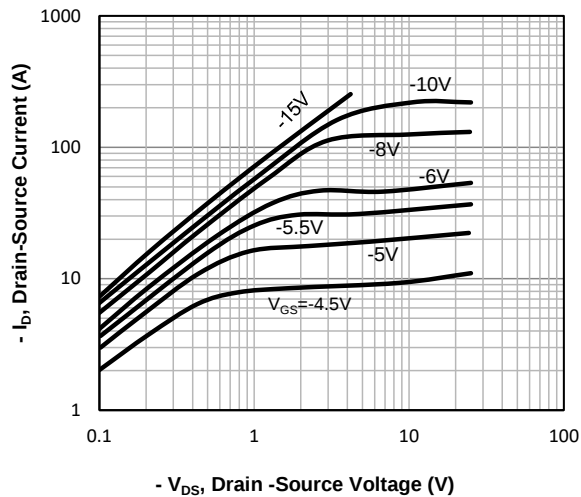


Fig1. Typical Output Characteristics

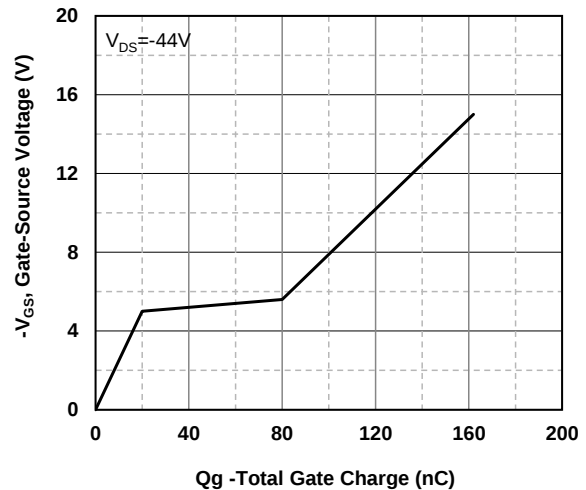


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

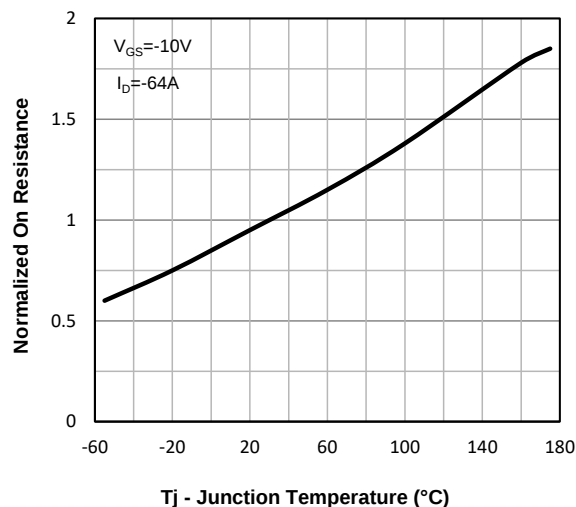


Fig3. Normalized On-Resistance Vs. Temperature

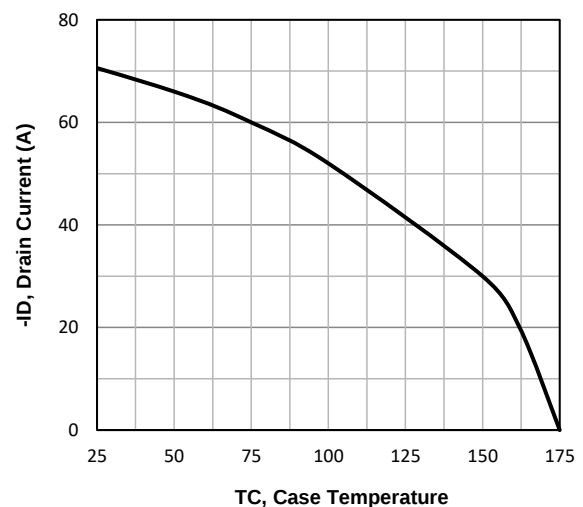


Fig4. Maximum Drain Current Vs. Case Temperature

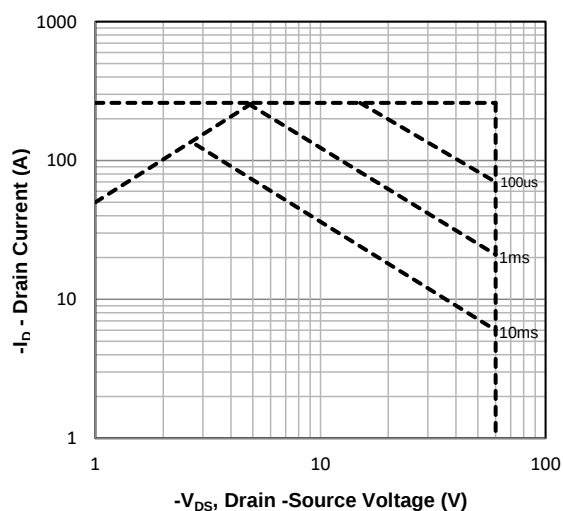


Fig5. Maximum Safe Operating Area

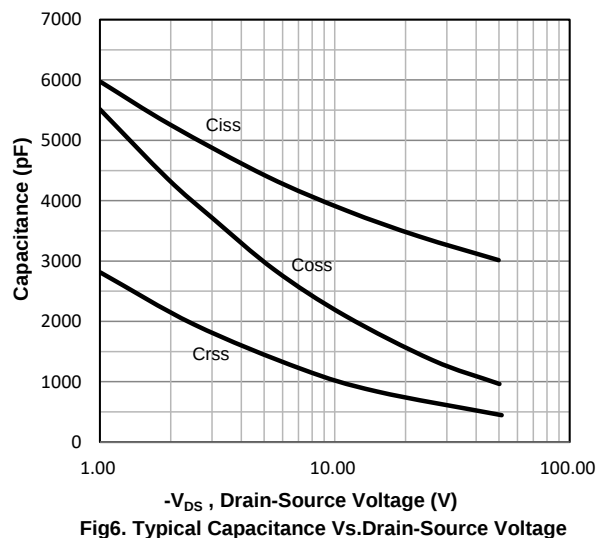
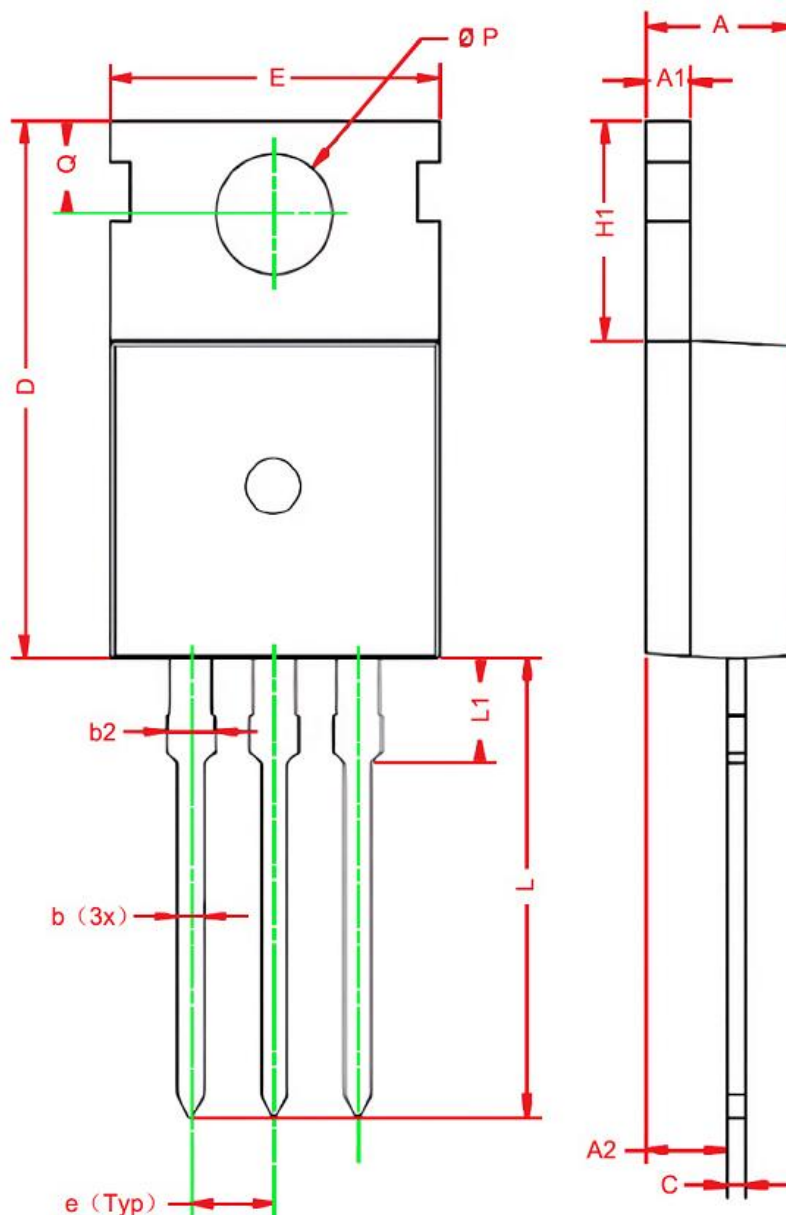


Fig6. Typical Capacitance Vs. Drain-Source Voltage

TO-220 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	3.600	4.800	0.142	0.189
A1	1.200	1.400	0.047	0.055
A2	2.030	2.900	0.080	0.114
b	0.400	1.000	0.016	0.039
b2	1.200	1.780	0.047	0.070
c	0.360	0.600	0.014	0.024
D	14.220	16.500	0.561	0.651
e	2.340	2.740	0.092	0.108
E	9.700	10.600	0.383	0.418
H1	5.840	6.850	0.230	0.270
L	12.700	14.700	0.501	0.580
L1	2.700	3.300	0.106	0.130
ØP	3.500	4.000	0.138	0.158
Q	2.540	3.400	0.100	0.134