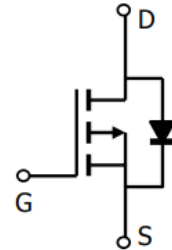


»Features

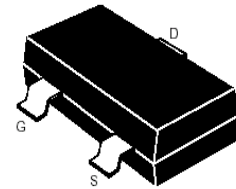
$V_{DS} = -20V$
 $I_D = -3.7A$
 $R_{DS(ON)} @V_{GS} = -4.5V, TYP = 50m\Omega$
 $R_{DS(ON)} @V_{GS} = -2.5V, TYP = 80m\Omega$

»Pin Configurations



»General Description

- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- SOT-23 for Surface Mount Package.



»Absolute Maximum Ratings @ $T_A=25^\circ C$ unless otherwise noted

Characteristic	Symbol	Max	Unit
Drain-Source Voltage	BV_{DSS}	-20	V
Gate- Source Voltage	V_{GS}	± 12	V
Drain Current (continuous)	I_D	-3.7	A
Drain Current (pulsed)	I_{DM}	-15	A
Total Device Dissipation $T_A=25^\circ C$	P_D	1100	mW
Junction	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-55to+150	$^\circ C$

»Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ unless otherwise noted

Characteristic	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage ($I_D = -250\mu\text{A}, V_{GS}=0\text{V}$)	BV_{DSS}	-20	—	—	V
Gate Threshold Voltage ($I_D = -250\mu\text{A}, V_{GS}=V_{DS}$)	$V_{GS(th)}$	-0.4	—	-1.2	V
Diode Forward Voltage Drop ($I_S = -1\text{A}, V_{GS}=0\text{V}$)	V_{SD}	—	—	-1.2	V
Zero Gate Voltage Drain Current ($V_{GS}=0\text{V}, V_{DS}= -20\text{V}$) ($V_{GS}=0\text{V}, V_{DS}= -20\text{V}, T_A=70^{\circ}\text{C}$)	I_{DSS}	—	—	-1 -25	μA
Gate Body Leakage ($V_{GS}=\pm 12\text{V}, V_{DS}=0\text{V}$)	I_{GSS}	—	—	± 100	nA
Static Drain-Source On-State Resistance ($I_D = -3.7\text{A}, V_{GS} = -4.5\text{V}$)	$R_{DS(ON)}$	—	50	65	$\text{m}\Omega$
Static Drain-Source On-State Resistance ($I_D = -3.1\text{A}, V_{GS} = -2.5\text{V}$)	$R_{DS(ON)}$	—	80	135	$\text{m}\Omega$
Input Capacitance ($V_{GS}=0\text{V}, V_{DS}= -10\text{V}, f=1\text{MHz}$)	C_{ISS}	—	600	—	pF
Output Capacitance ($V_{GS}=0\text{V}, V_{DS}= -10\text{V}, f=1\text{MHz}$)	C_{OSS}	—	120	—	pF
Turn-ON Time ($V_{DS}= -10\text{V}, I_D = -3.7\text{A}, R_{GEN}=6\Omega$)	$t_{(on)}$	—	8	—	ns
Turn-OFF Time ($V_{DS}= -10\text{V}, I_D = -3.7\text{A}, R_{GEN}=6\Omega$)	$t_{(off)}$	—	60	—	ns

Notes :

 *Pulse Test : Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

»Typical Performance Characteristics (T_J = 25 °C, unless otherwise noted)

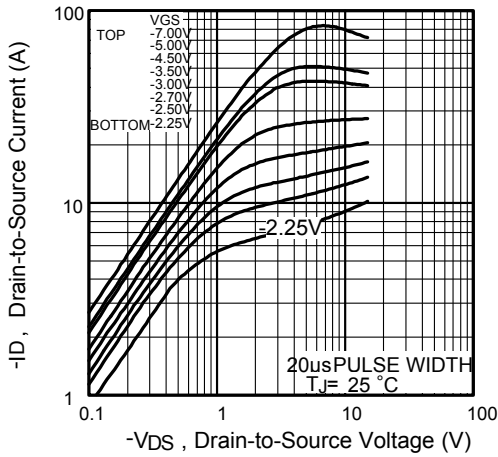


Fig 1. Typical Output Characteristics

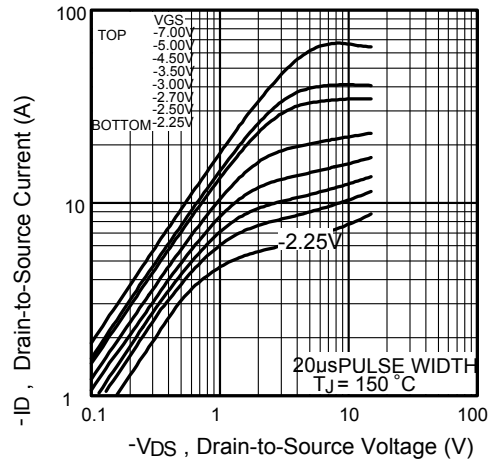


Fig 2. Typical Output Characteristics

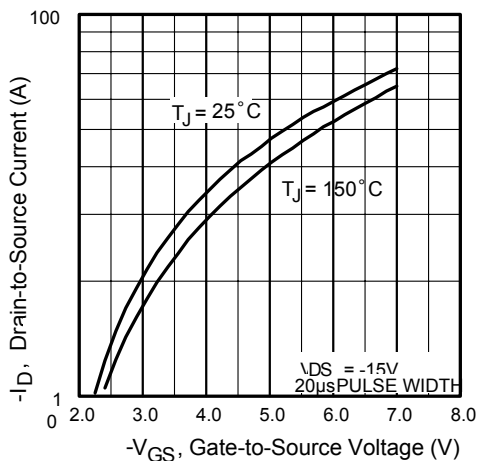


Fig 3. Typical Transfer Characteristics

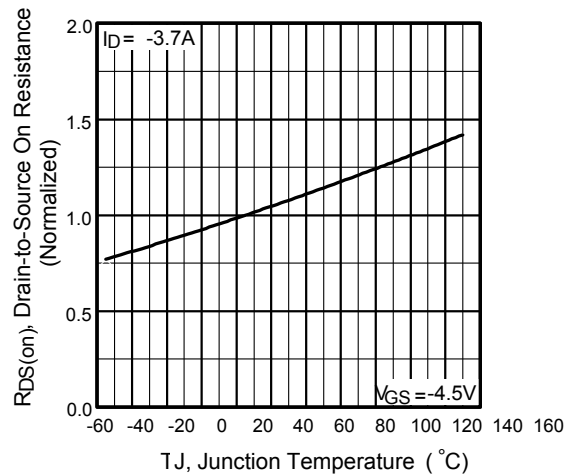


Fig 4. Normalized On-Resistance

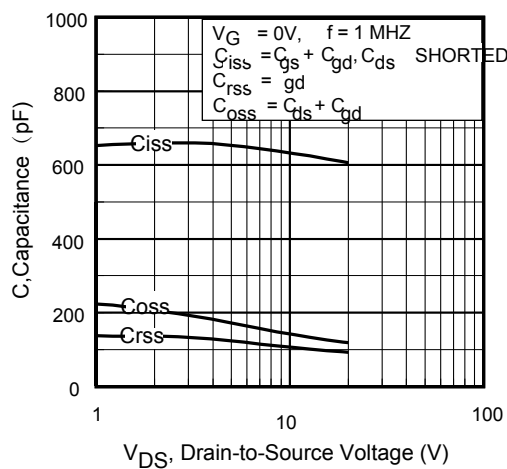


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

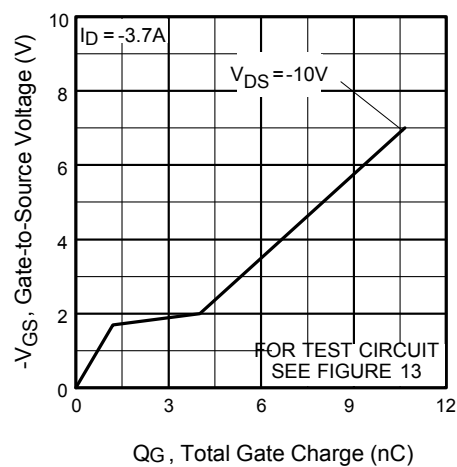


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

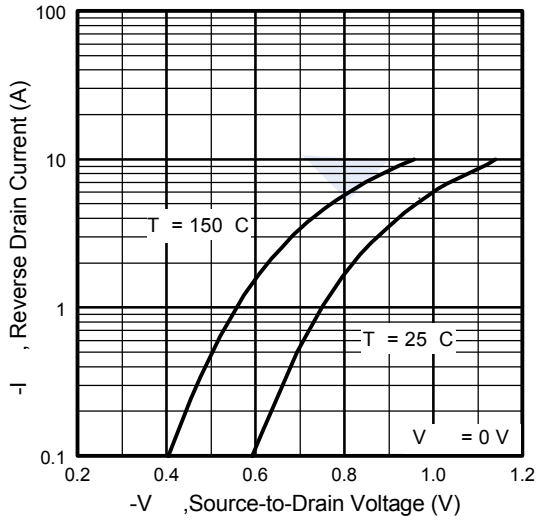


Fig 7. Typical Source-Drain Diode Forward Voltage

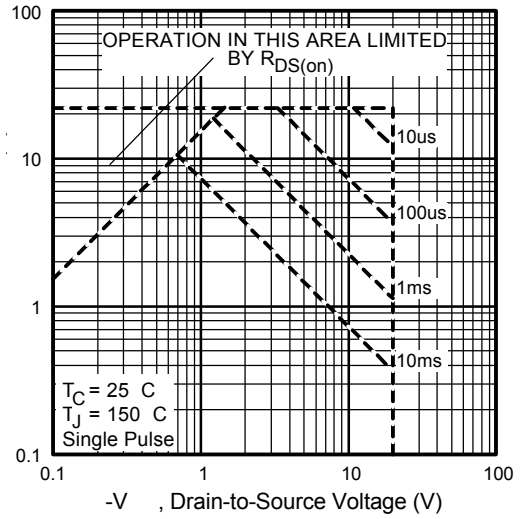


Fig 8. Maximum Safe Operating Area

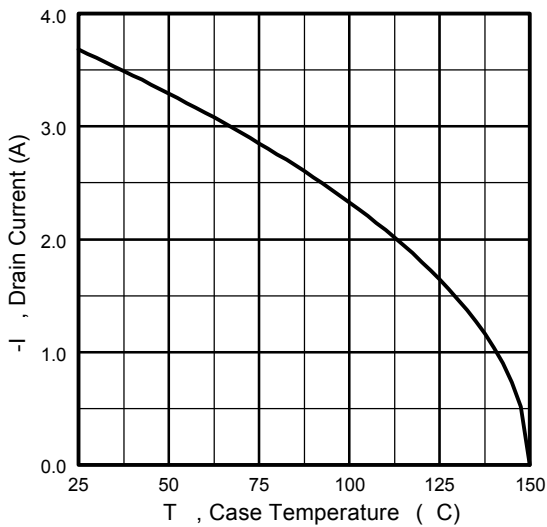


Fig 9. Maximum Drain Current Vs. Case Temperature

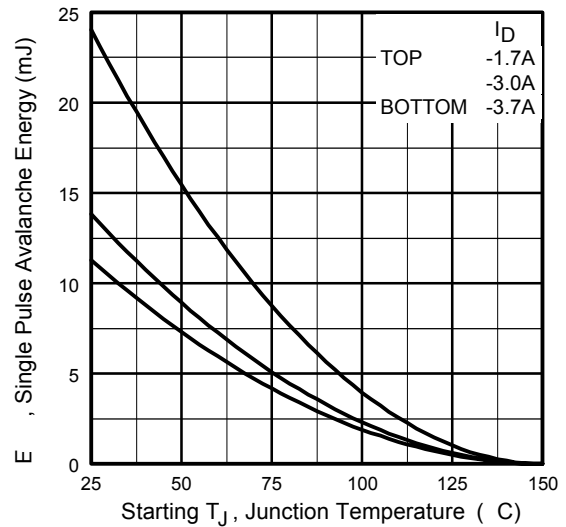
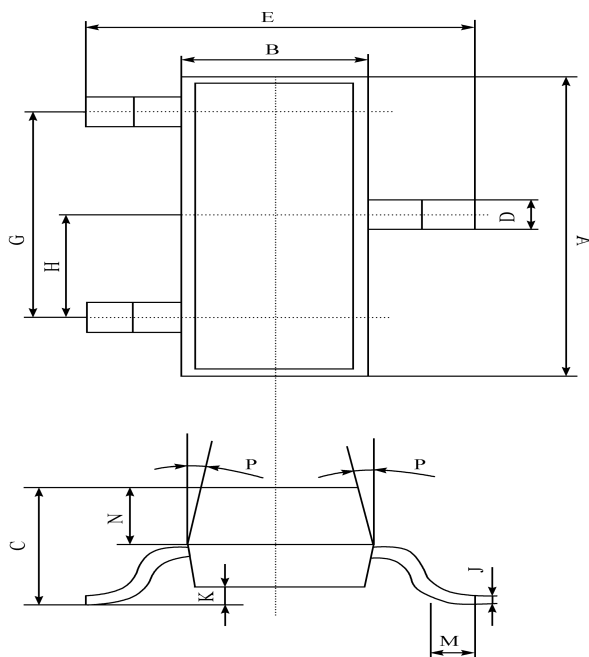


Fig 10. Maximum Avalanche Energy Vs. Drain Current

»Package Information

SOT-23



A	2.90 ± 0.10
B	1.30 ± 0.10
C	1.00 ± 0.10
D	0.40 ± 0.10
E	2.40 ± 0.20
G	1.90 ± 0.10
H	0.95 ± 0.05
J	0.13 ± 0.05
K	0.00-0.10
M	≥ 0.2
N	0.60 ± 0.10
P	7 ± 2°

»Ordering information

Order code	Package	Marking	Base qty	Delivery mode
IRLML6402	SOT-23	6402	3K	Tape and reel

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