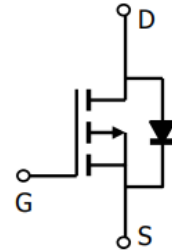


»Features

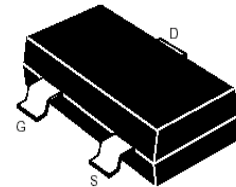
$V_{DS} = -12V$
 $I_D = -4.3A$
 $R_{DS(ON)} @V_{GS} = -4.5V, MAX = 50m\Omega$
 $R_{DS(ON)} @V_{GS} = -2.5V, MAX = 85m\Omega$

»Pin Configurations



»General Description

- Fast switching
- High Density Cell Design For Ultra Low On-Resistance
- SOT-23-3L for Surface Mount Package.



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-12	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current $V_{GS}=4.5V @ T_A=25^{\circ}C$	I_D	-4.3	A
Pulsed Drain Current	I_{DM}	-13	
Power Dissipation @ $T_A=25^{\circ}C$	P_D	1.3	W
Thermal Resistance Junction- to-Ambient	R_{thJA}	100	$^{\circ}C/W$
Linear Derating Factor		0.01	$W/^{\circ}C$
Junction Temperature	T_J	150	$^{\circ}C$
Junction and Storage Temperature Range	T_{stg}	-55 to 150	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D=-250\ \mu\text{A}$, $V_{GS}=0\text{V}$	-12			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-12\text{V}$, $V_{GS}=0\text{V}$			-1	μA
		$V_{DS}=-9.6\text{V}$, $V_{GS}=0\text{V}$, $T_J=55^{\circ}\text{C}$			-25	
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}$, $V_{GS}=\pm 8\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=-250\ \mu\text{A}$	-0.4		-0.95	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5\text{V}$, $I_D=-4.3\text{A}$			50	m Ω
		$V_{GS}=-2.5\text{V}$, $I_D=-2.5\text{A}$			85	
		$V_{GS}=-1.8\text{V}$, $I_D=-2\text{A}$			125	
Forward Transconductance	g_{FS}	$V_{DS}=-10\text{V}$, $I_D=-4.3\text{A}$	8.6			S
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$, $V_{DS}=-10\text{V}$, $f=1\text{MHz}$		830		pF
Output Capacitance	C_{oss}			180		
Reverse Transfer Capacitance	C_{rss}			125		
Turn-On DelayTime	$t_{d(on)}$	$I_D=1.0\text{A}$, $V_{DS}=-6.0\text{V}$, $R_{GEN}=6\ \Omega$		11		ns
Turn-Off DelayTime	$t_{d(off)}$			250		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=-1.3\text{A}$, $di/dt=-100\text{A}/\mu\text{s}$		22	33	
Maximum Body-Diode Continuous Current	I_S				1.3	A
Diode Forward Voltage	V_{SD}	$I_S=-1.3\text{A}$, $V_{GS}=0\text{V}$			-1.2	V

Notes :

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

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

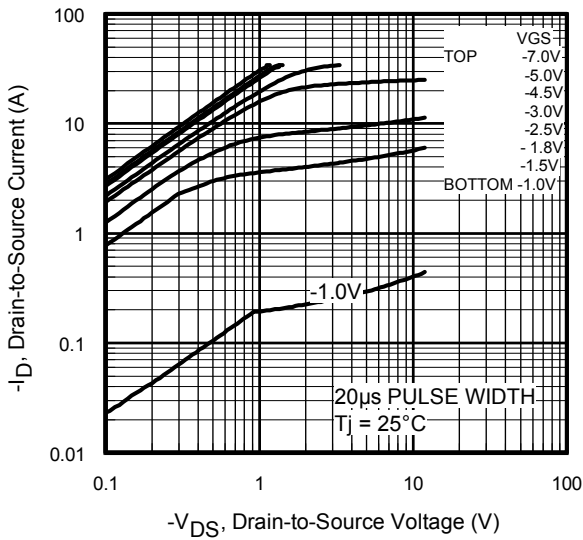


Fig 1. Typical Output Characteristics

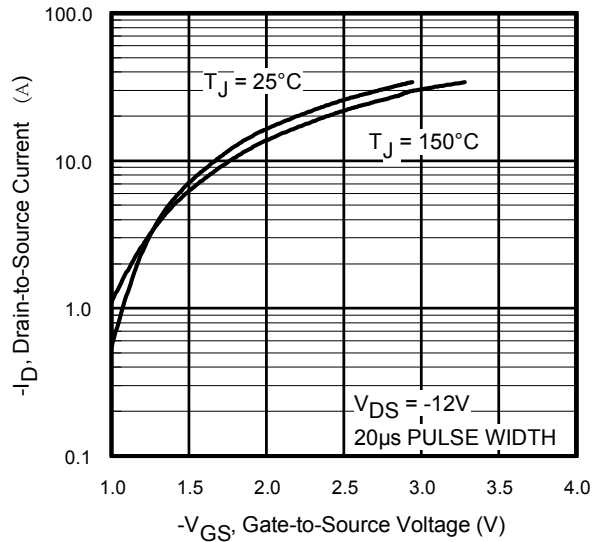


Fig 2. Typical Transfer Characteristics

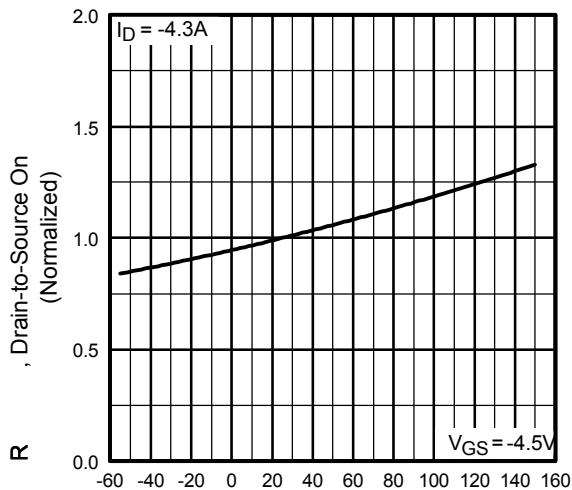


Fig 3. Normalized On-Resistance Vs. Temperature

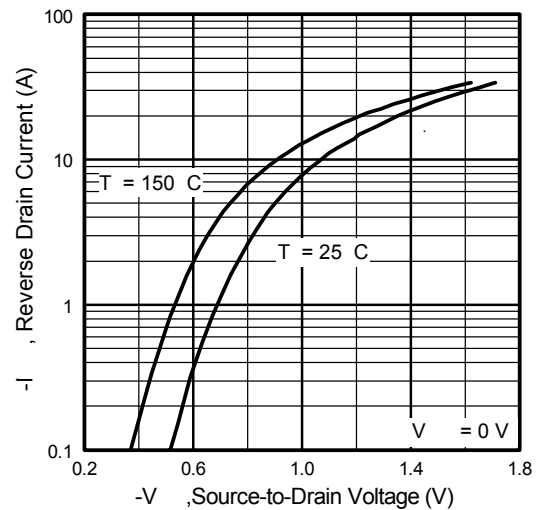


Fig 4. Typical Source-Drain Diode Forward Voltage

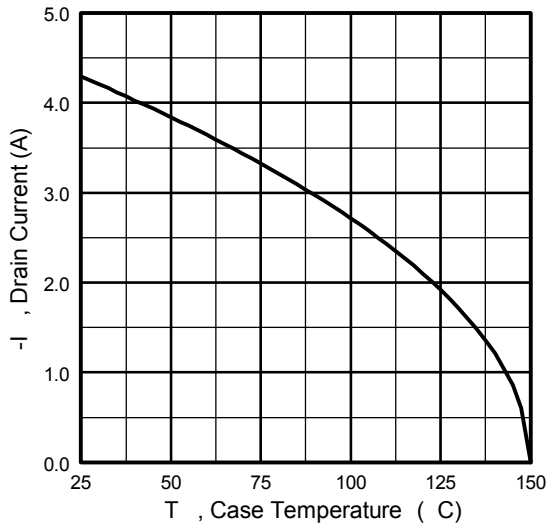


Fig 5 Maximum Drain Current Vs. Case Temperature

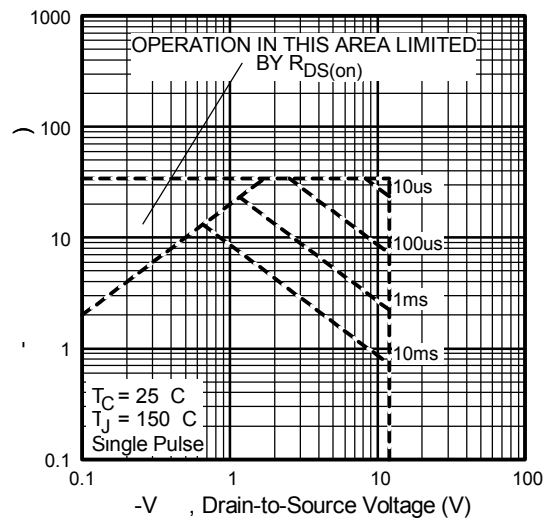
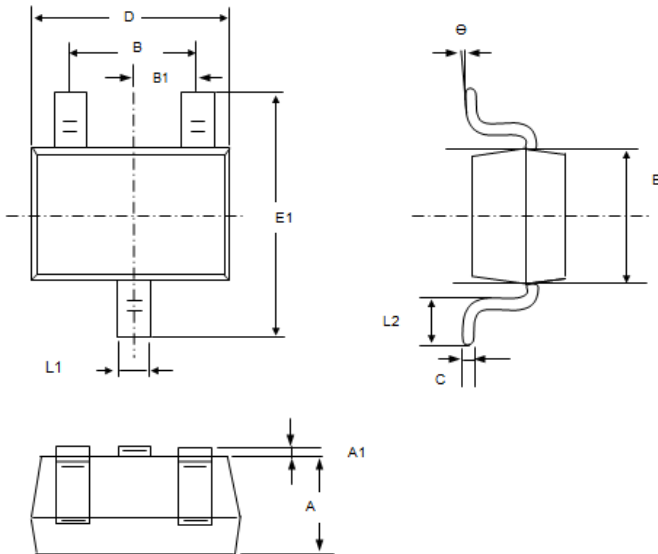


Fig 6. Maximum Safe Operating Area

»Package Information

SOT-23-3L



Symbol	Dim in mm		
	Min	Nor	Max
A	1.050	1.100	1.150
A1	0.00	0.050	0.100
L1	0.300	0.400	0.500
C	0.100	0.150	0.200
D	2.820	2.920	3.020
E	1.500	1.600	1.700
E1	2.650	2.800	2.950
B	1.800	1.900	2.000
B1	0.950 TPY.		
L2	0300	0.450	0.600
θ	0°	4°	8°

»Ordering information

Order code	Package	Marking	Base qty	Delivery mode
IRLML6401	SOT-23-3L	6401	3K	Tape and reel