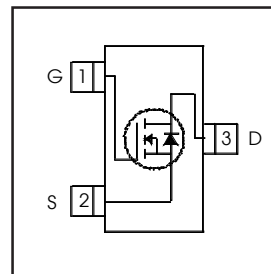
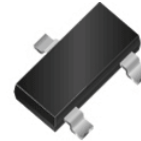


**RoHS Device  
Halogen Free**

### ■ Features

- Ultra Low On-Resistance
- N-Channel MOSFET
- SOT-23 Footprint
- Low Profile (<1.1mm)
- Available in Tape and Reel
- Fast Switching

SOT-23



$V_{DSS} = 20V$ $R_{DS(on)} = 0.045\Omega$
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### ■ MAXIMUM RATINGS

Characteristic	Symbol	Max	Unit
Drain- Source Voltage	$BV_{DSS}$	20	V
Gate- Source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current (continuous)	$I_D$	4.2	A
Drain Current (pulsed)	$I_{DM}$	16	A
Total Device Dissipation $T_A = 25^\circ C$	$P_D$	1250	mW
Junction	$T_J$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55to+150	$^\circ C$

**N-Channel Enhancement-Mode MOSFET**
**■ ELECTRICAL CHARACTERISTICS**

 (T<sub>A</sub>=25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage (I <sub>D</sub> = 250μA, V <sub>GS</sub> =0V)	BV <sub>DSS</sub>	20	—	—	V
Gate Threshold Voltage (I <sub>D</sub> =250μA, V <sub>GS</sub> =V <sub>DS</sub> )	V <sub>GS(th)</sub>	0.6	—	1.2	V
Diode Forward Voltage Drop (I <sub>S</sub> =1.3A, V <sub>GS</sub> =0V)	V <sub>SD</sub>	—	—	1.2	V
Zero Gate Voltage Drain Current (V <sub>GS</sub> =0V, V <sub>DS</sub> =16V) (V <sub>GS</sub> =0V, V <sub>DS</sub> =16V, T <sub>A</sub> = 70°C)	I <sub>DSS</sub>	—	—	1 25	μA
Gate Body Leakage (V <sub>GS</sub> =±12V, V <sub>DS</sub> =0V)	I <sub>GSS</sub>	—	—	±100	nA
Static Drain-Source On-State Resistance (I <sub>D</sub> = 4.2A, V <sub>GS</sub> = 4.5V)	R <sub>DS(ON)</sub>	—	35	45	mΩ
Static Drain-Source On-State Resistance (I <sub>D</sub> = 3.6A, V <sub>GS</sub> = 2.5V )	R <sub>DS(ON)</sub>	—	50	80	mΩ
Input Capacitance (V <sub>GS</sub> =0V, V <sub>DS</sub> =15V, f=1 MHz)	C <sub>ISS</sub>	—	740	—	pF
Output Capacitance (V <sub>GS</sub> =0V, V <sub>DS</sub> = 15V, f=1 MHz)	C <sub>OSS</sub>	—	90	—	pF
Turn-ON Time (V <sub>DS</sub> =10V, I <sub>D</sub> = 1A, R <sub>GEN</sub> =6Ω)	t <sub>(on)</sub>	—	8	—	ns
Turn-OFF Time (V <sub>DS</sub> =10V, I <sub>D</sub> = 1A, R <sub>GEN</sub> =6Ω)	t <sub>(off)</sub>	—	60	—	ns

Pulse Width ≤ 300μ s; Duty Cycle ≤ 2.0%

■ TYPICAL CHARACTERISTICS

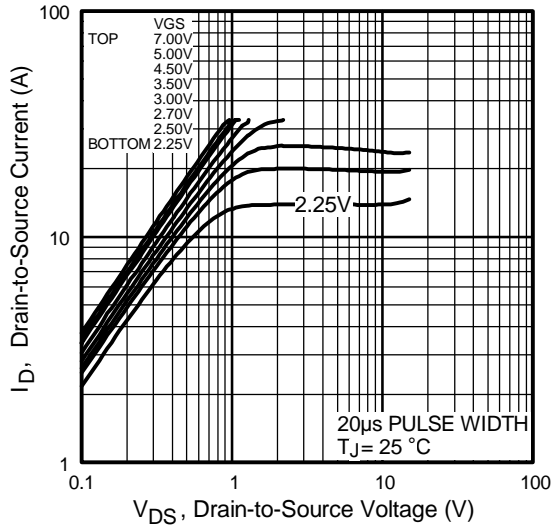


Fig 1. Typical Output Characteristics

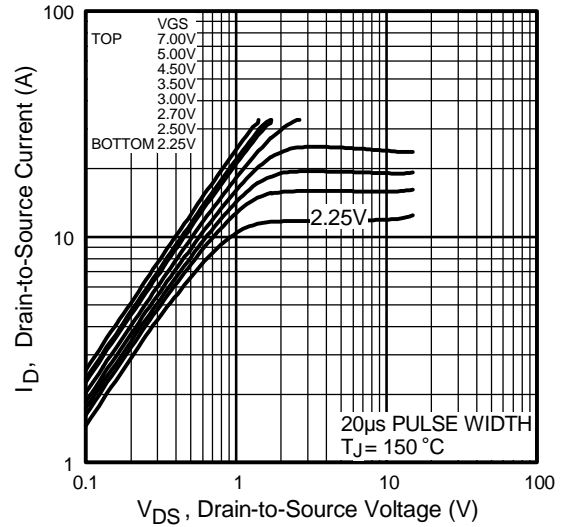


Fig 2. Typical Output Characteristics

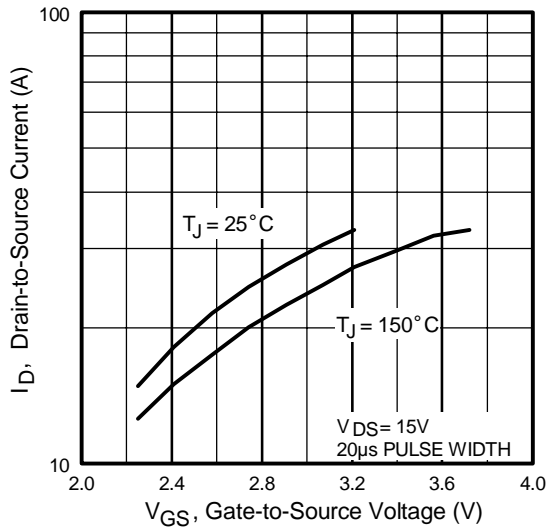


Fig 3. Typical Transfer Characteristics

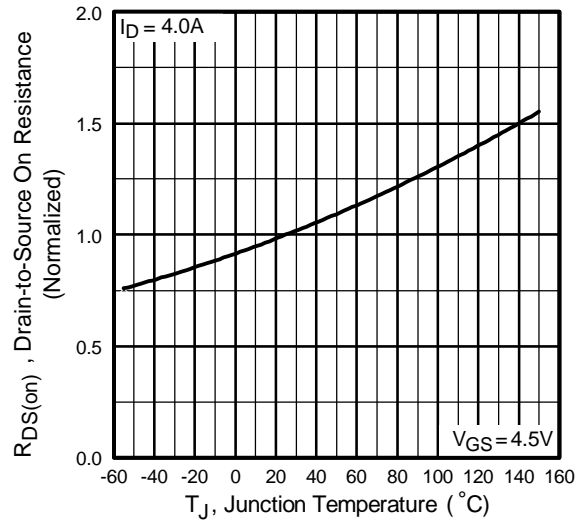


Fig 4. Normalized On-Resistance Vs. Temperature

N-Channel Enhancement-Mode MOSFET

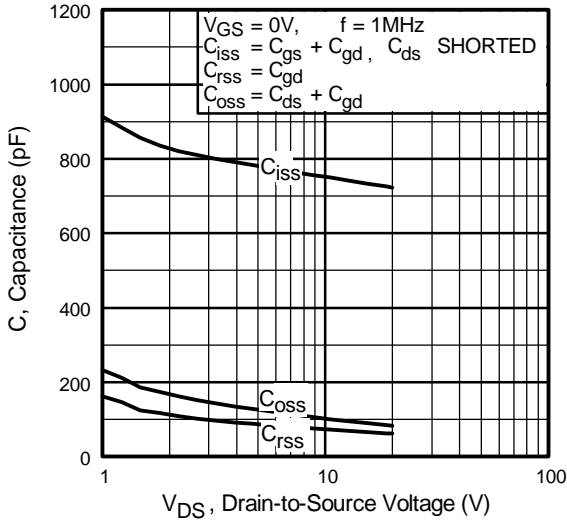


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

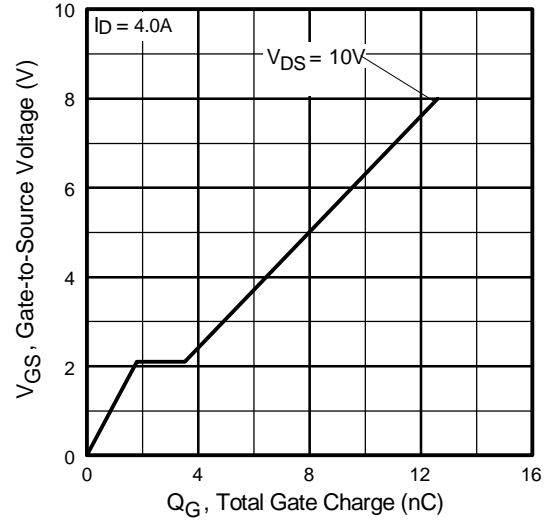


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

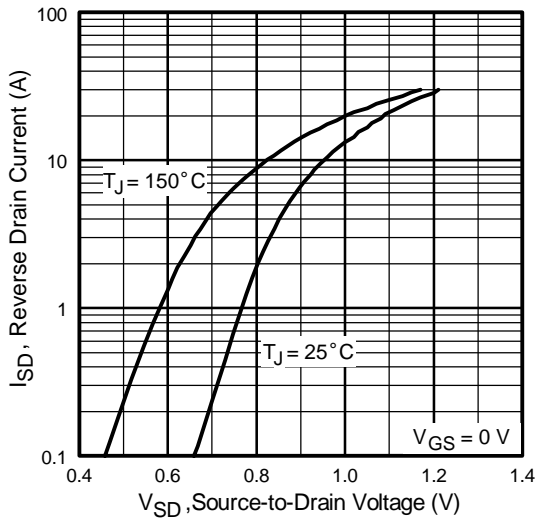


Fig 7. Typical Source-Drain Diode Forward Voltage

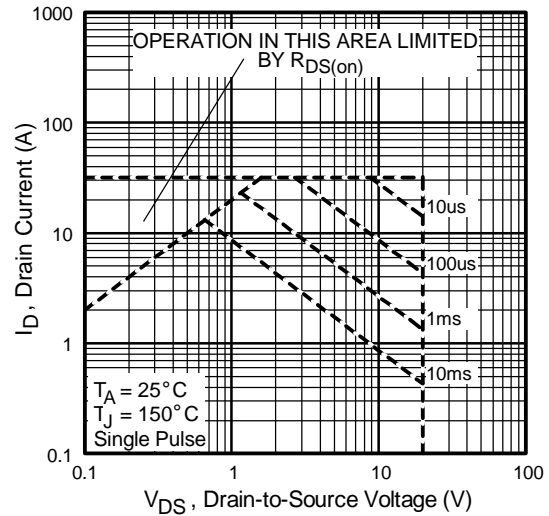
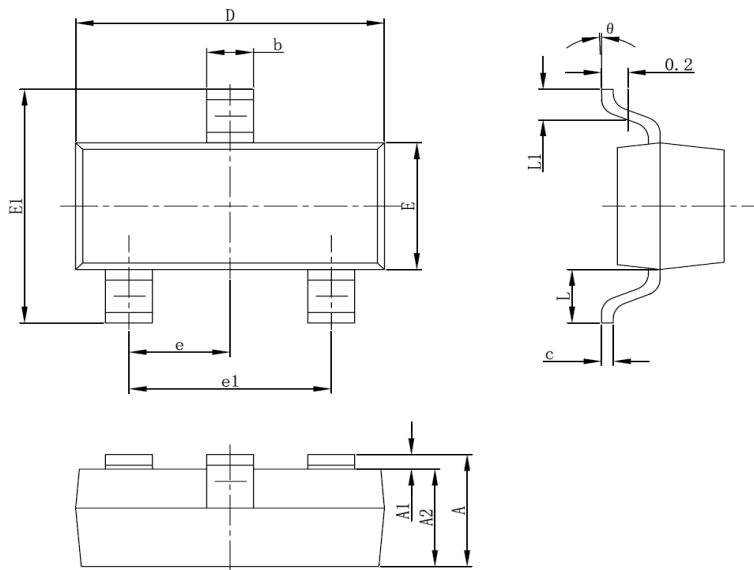


Fig 8. Maximum Safe Operating Area

**■ SOT-23 PACKAGE OUTLINE**


Symbol	Dimensions In Millimeters		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	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
$\theta$	0°	8°	0°	8°