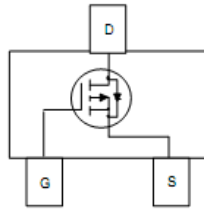
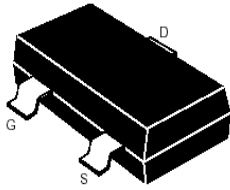


SOT-23

Features

- Ultra low on-resistance.
- Fast switching.

Marking: 6401
Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

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 a	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	

Notes:

- a. Repetitive Rating :Pulse width limited by maximum junction temperature
 b. Starting $T_J=25^\circ C$, $L=3.5mH$, $R_G=25\Omega$, $I_{AS}=-4.3A$

Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

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

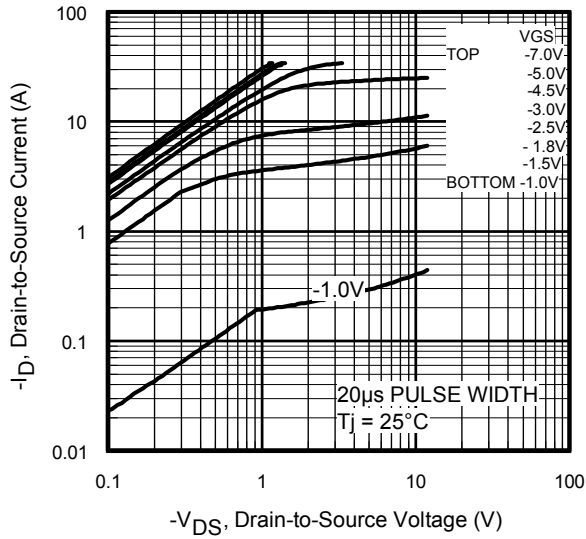


Fig 1. Typical Output Characteristics

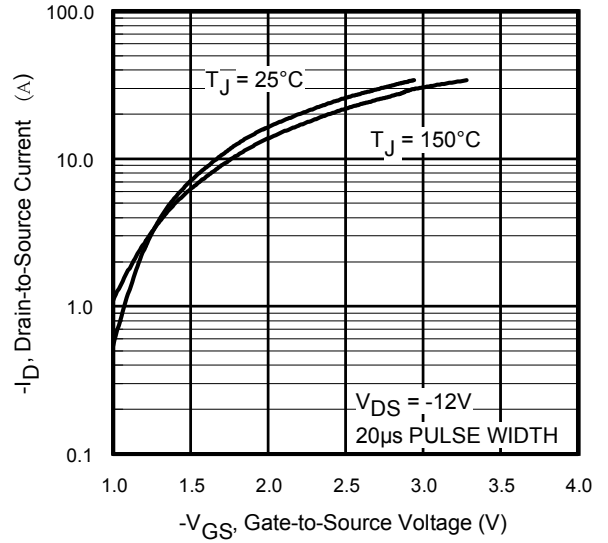


Fig 2. Typical Transfer Characteristics

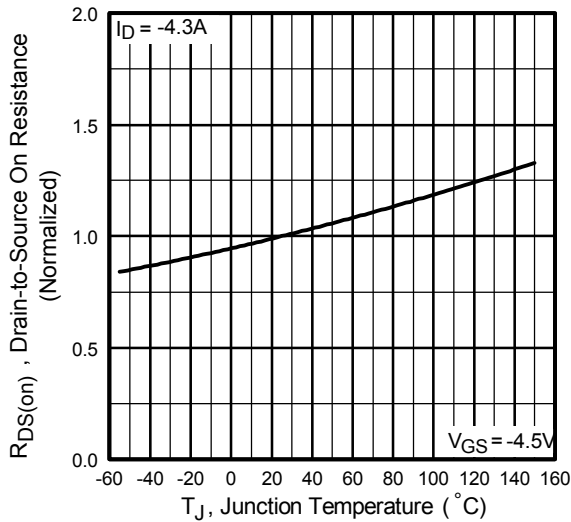


Fig 3. Normalized On-Resistance Vs. Temperature

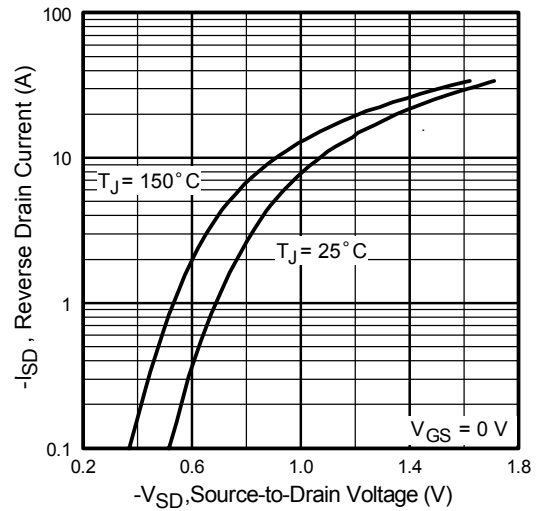


Fig 4. Typical Source-Drain Diode Forward Voltage

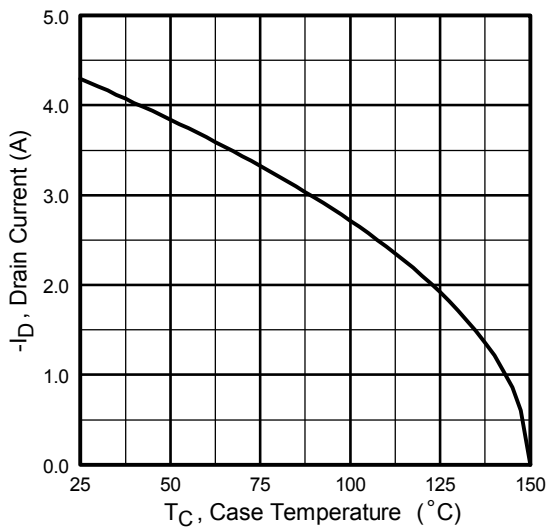


Fig 5 Maximum Drain Current Vs. Case Temperature

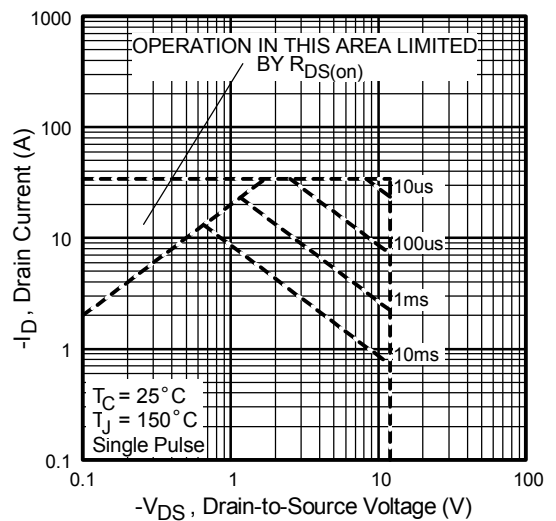
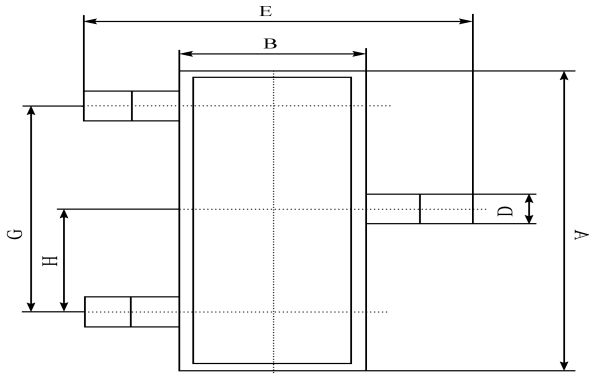


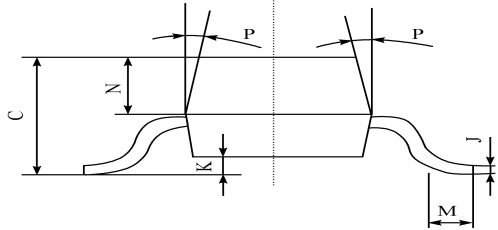
Fig 6. Maximum Safe Operating Area

SOT-23 PACKAGE OUTLINE Plastic surface mounted package



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°

(UNIT): mm



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