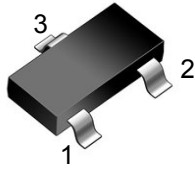
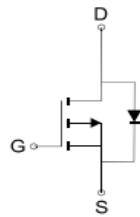


SOT-23

MARKING: R1


P-Channel MOSFET

Features

Advanced trench process technology
 High density cell design for Ultra Low On-Resistance
 Halogen free and RoHS compliant

Mechanical Data

SOT-23 Small Outline Plastic Package
 EpoxyUL:94V-0

Maximum Ratings & Thermal Characteristics

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

Symbol	Parameter	Rating	Unit
V_{DS}	Drain-Source Breakdown Voltage	-30	V
V_{GS}	Gate-Source Voltage	±12	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 155	°C
I_S	Diode Continuous Forward Current	$T_c=25^\circ\text{C}$ -4.2	A
I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$ -16.5	A
I_D	Continuous Drain Current@GS=10V	$T_c=25^\circ\text{C}$ -4.2	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$ 1.5	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient>(*1 in2 Pad of 2-oz Copper), Max.)	82	°C/W

Electrical Characteristics

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

Symbol	Parameter	Condition	Min	Typ	Max	Unit
$BV_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-30	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-30V, V_{GS}=0V$	--	--	-1	uA
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 12V, V_{DS}=0V$	--	--	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.6	-0.9	-1.3	V
$R_{DS(on)}$	Drain-Source On-State Resistance	$V_{GS}=-10V, I_D=-4.2A$	--	43	55	mΩ
		$V_{GS}=-4.5V, I_D=-2.5A$	--	50	68	
Dynamic Electrical Characteristics						
C_{ISS}	Input Capacitance	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$	--	1500	--	pF
C_{OSS}	Output Capacitance		--	80	--	pF
C_{RSS}	Reverse Transfer Capacitance		--	2	--	pF
Q_g	Total Gate Charge	$V_{DS}=-15V, I_D=-4.2A, V_{GS}=-10V$	--	8.5	--	nC
Q_{gs}	Gate Source Charge		--	1.8	--	nC
Q_{gd}	Gate Drain Charge		--	2.7	--	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	$V_{DS}=-15V, I_D=-1A, V_{GS}=-10V, R_G=3\Omega$	--	7	--	nS
t_r	Turn-on Rise Time		--	3	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	20	--	nS
t_f	Turn-Off Fall Time		--	12	--	nS
Source- Drain Diode Characteristics						
V_{SD}	Forward on voltage	$T_j=25^\circ\text{C}, I_s=-3A$	--	-0.85	-1.2	V

Ratings and Characteristic Curves

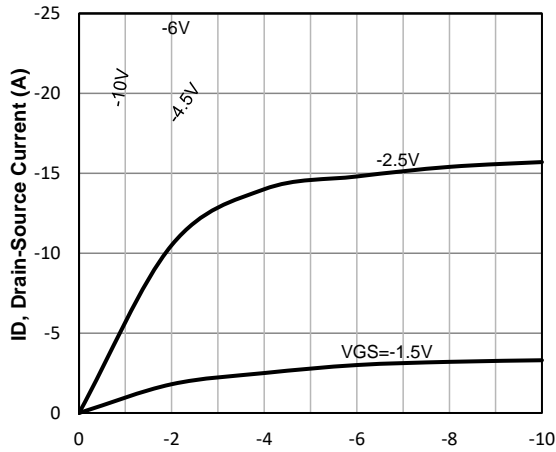


Fig1. Typical Output Characteristics

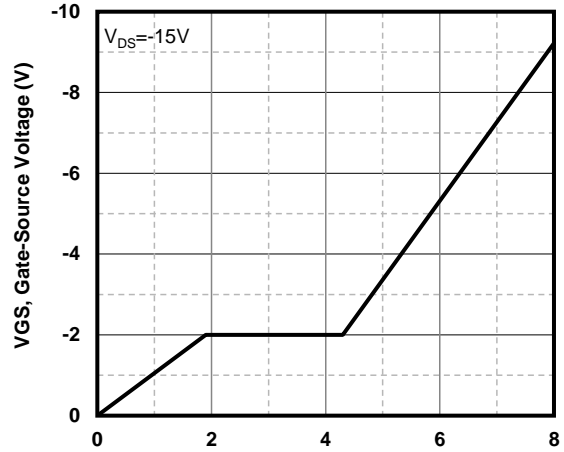


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

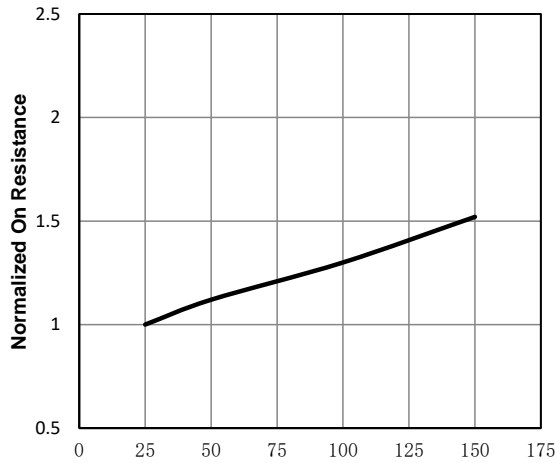


Fig3. Normalized On-Resistance Vs. Temperature

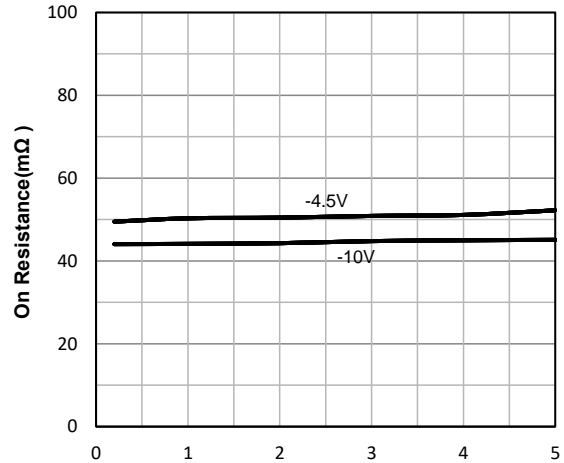


Fig4. On-Resistance Vs. Drain-Source Current

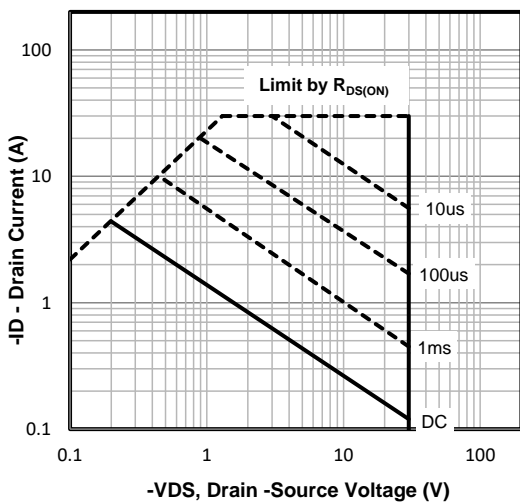


Fig5. Maximum Safe Operating Area

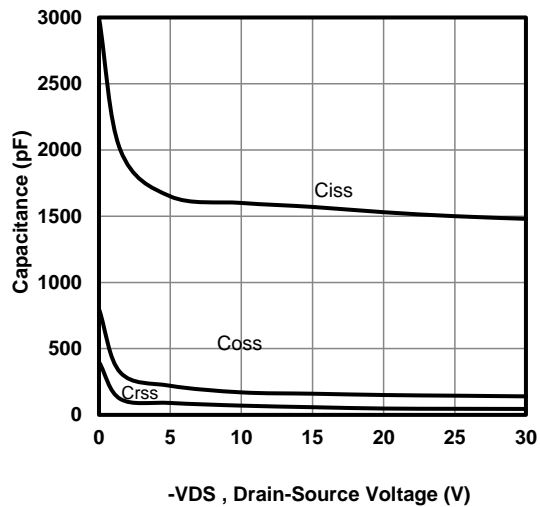
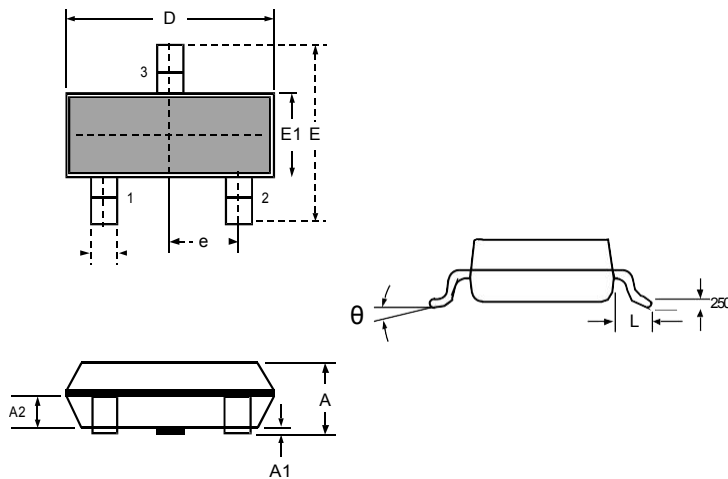


Fig6 Typical Capacitance Vs. Drain-Source

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SOT-23	Tape/Reel, 7" reel	3000	EIA-481-1

Package Outline Dimensions: SOT-23



DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
D	2.800	3.000	0.110	0.118
b	0.300	0.500	0.012	0.020
E	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
e	0.950 BSC		0.037 BSC	
L	0.300	0.500	0.012	0.020
θ	0	8°	0	8°