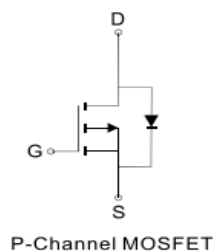
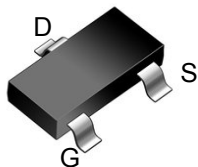


SOT-23



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

$V_{(BR)DSS}$	$R_{DS(ON)}$ Typ	I_D Max
-15V	45 mΩ @ -4.5V	-5A
	60 mΩ @ -2.5V	

Marking: R15A

Application

Battery protection
Load switch
Power management

Summary of Packing Options

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

Maximum Ratings & Thermal Characteristics

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

Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		-15	V
V _{GS}	Gate-Source Voltage		±10	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _S	Diode Continuous Forward Current	Tc=25°C	-5	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	-28	A
I _D	Continuous Drain Current	Tc=25°C	-5	A
P _D	Maximum Power Dissipation	Tc=25°C	1.2	W
R _{θJA}	Thermal Resistance Junction-to-Ambient		105	°C/W

Electrical Characteristics

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

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV(BR)DSS	Drain-Source Breakdown Voltage	VGS=0V, ID=-250μA	-15	–	–	V
IDSS	Zero Gate Voltage Drain Current	VDS=-15V, VGS=0V	–	–	-1	μA
IGSS	Gate-Body Leakage Current	VGS=±10V, VDS=0V	–	–	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-0.4	-0.7	-1.0	V
RDS(on)	Drain-Source On-State Resistance	VGS=-4.5V, ID=-3A	–	28	45	mΩ
		VGS=-2.5V, ID=-3A	–	35	60	mΩ
		VGS=-1.8V, ID=-1A	–	52	80	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=-9V, VGS=0V, f=1MHz	–	1015	–	pF
COSS	Output Capacitance		–	138	–	pF
CRSS	Reverse Transfer Capacitance		–	105	–	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=-9V, ID=-5A, VGS=-4.5V	–	11.3	–	nC
Qgs	Gate Source Charge		–	2.3	–	nC
Qgd	Gate Drain Charge		–	2.4	–	nC
td(on)	Turn-on Delay Time	VDD=-9V, ID=-1A, VGS=-4.5V, RG=2.5Ω	–	8.5	–	nS
tr	Turn-on Rise Time		–	35.5	–	nS
td(off)	Turn-Off Delay Time		–	78	–	nS
tf	Turn-Off Fall Time		–	58	–	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	TJ=25℃, IS=-5A	–	–	-1.2	V

Ratings and Characteristic Curves

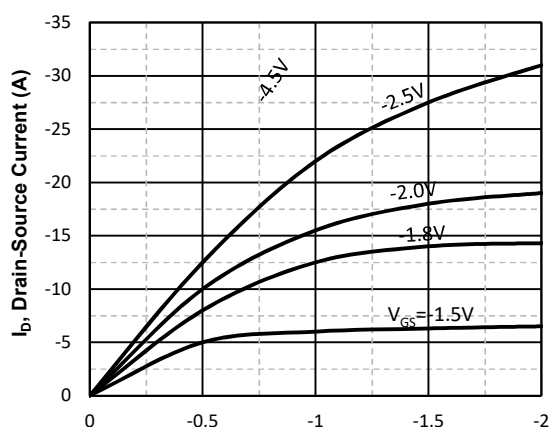


Fig1. Typical Output Characteristics

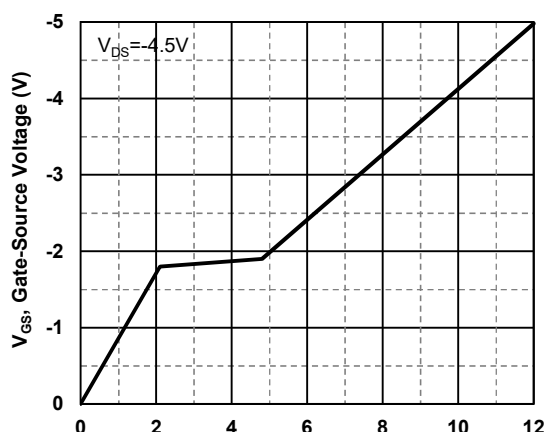
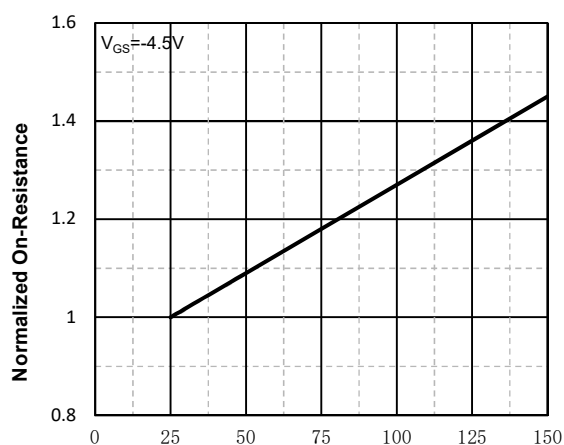
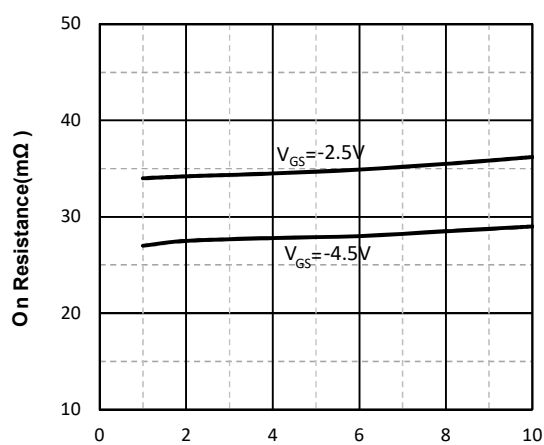


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

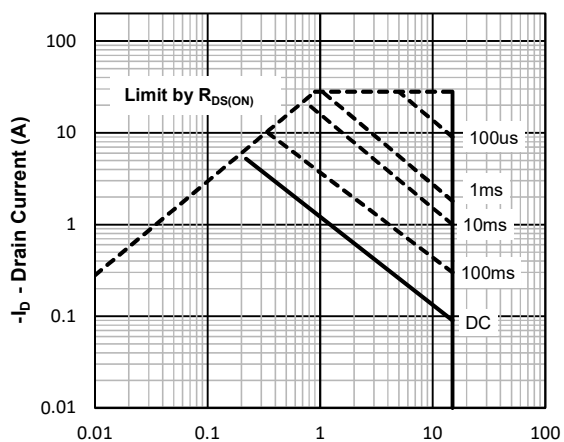
Ratings and Characteristic Curves



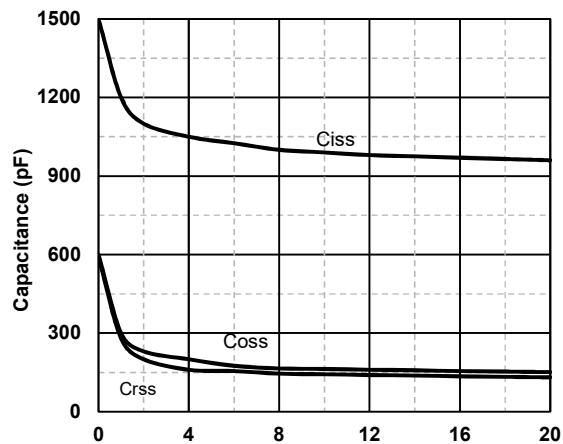
T_j - Junction Temperature (°C)
Fig3. Normalized On-Resistance Vs. Temperature



-I_D, Drain-Source Current (A)
Fig4. On Resistance Vs. Drain-Source Current

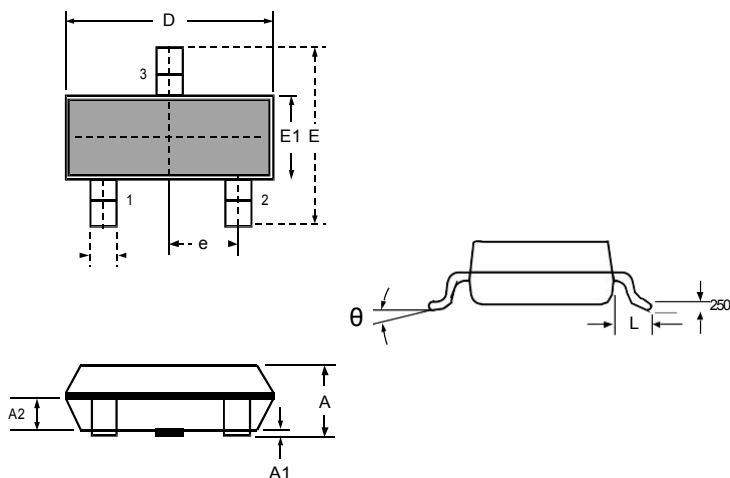


-V_{DS}, Drain-Source Voltage (V)
Fig5. Maximum Safe Operating Area



-V_{DS}, Drain-Source Voltage (V)
Fig6 Typical Capacitance Vs. Drain-Source Voltage

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°