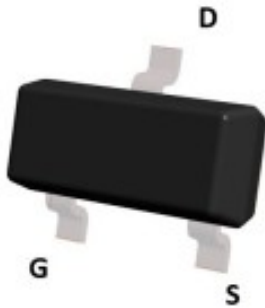
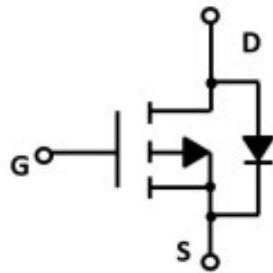
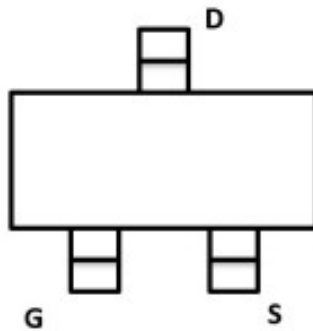


P-Channel Enhancement Mode Field Effect Transistor



Top View

SOT-23



Product Summary

- V_{DS} -20V
- I_D -2A
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <94 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-2.5V$) <127 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-1.8V$) <187 mohm

General Description

- Trench Power LV MOSFET technology
- Low $R_{DS(ON)}$
- Low Gate Charge

Applications

- Video monitor
- Power management

■ Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Maximum	Unit
Drain-source Voltage	V_{DS}	-20	V
Gate-source Voltage	V_{GS}	± 10	V
Drain Current	I_D	$T_A=25^{\circ}C$ @ Steady State	-2
		$T_A=70^{\circ}C$ @ Steady State	-1.6
Pulsed Drain Current ^A	I_{DM}	-8	A
Total Power Dissipation @ $T_A=25^{\circ}C$	P_D	0.7	W
Thermal Resistance Junction-to-Ambient ^B	$R_{\theta JA}$	178	$^{\circ}C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^{\circ}C$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ELV20152RPO	F2	E152RP	3000	30000	120000	7 'feet

■ Electrical Characteristics ($T_J=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V, T_C=25^\circ\text{C}$			-1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.62	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-1.5A$		81	94	m Ω
		$V_{GS}=-2.5V, I_D=-1.5A$		109	127	
		$V_{GS}=-1.8V, I_D=-1.5A$		152	187	
Diode Forward Voltage	V_{SD}	$I_S=-2A, V_{GS}=0V$		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	I_S				-2	A
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{DS}=-10V, V_{GS}=0V, f=1\text{MHZ}$		327		pF
Output Capacitance	C_{oss}			62		
Reverse Transfer Capacitance	C_{riss}			55		
Switching Parameters						
Total Gate Charge	Q_g	$V_{GS}=-4.5V, V_{DS}=-10V, I_D=-2A$		4.5		nC
Gate Source Charge	Q_{gs}			0.85		
Gate Drain Charge	Q_{gd}			1.4		
Reverse Recovery Charge	Q_{rr}	$I_F=-2A, di/dt=100A/\mu s$		2.3		
Reverse Recovery Time	t_r			27		
Turn-on Delay Time	$t_{d(on)}$	$V_{GS}=-4.5V, V_{DS}=-10V, I_D=-1A, R_{GDN}=2.5\Omega$		6		ns
Turn-on Rise Time	t_r			30		
Turn-off Delay Time	$t_{d(off)}$			45		
Turn-off Fall Time	t_f			46		

A. A.Pulse Test: Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

■ Typical Performance Characteristics

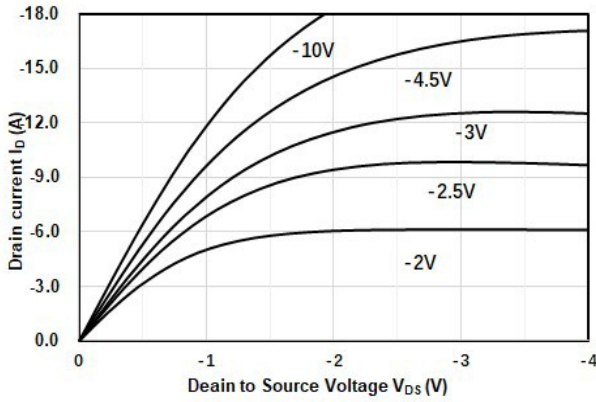


Figure1. Output Characteristics

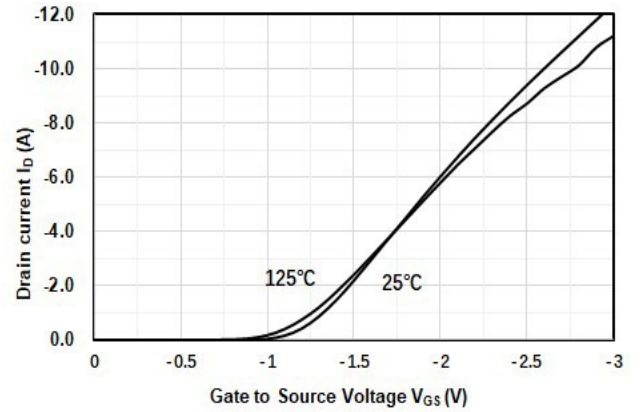


Figure2. Transfer Characteristics

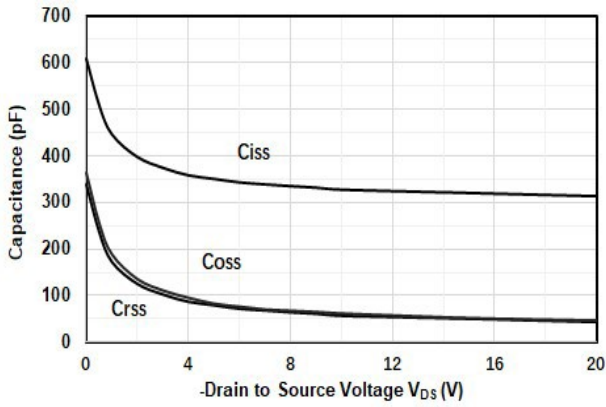


Figure3. Capacitance Characteristics

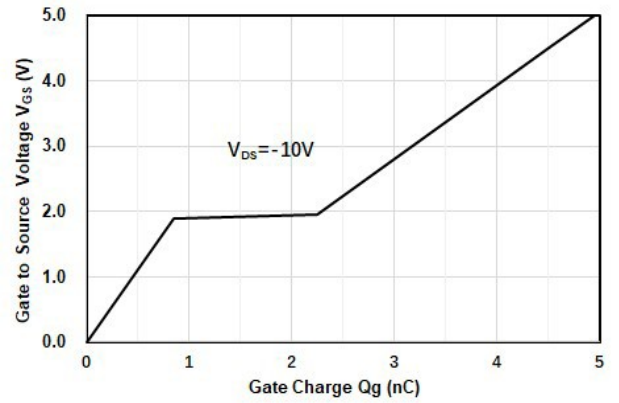


Figure4. Gate Charge

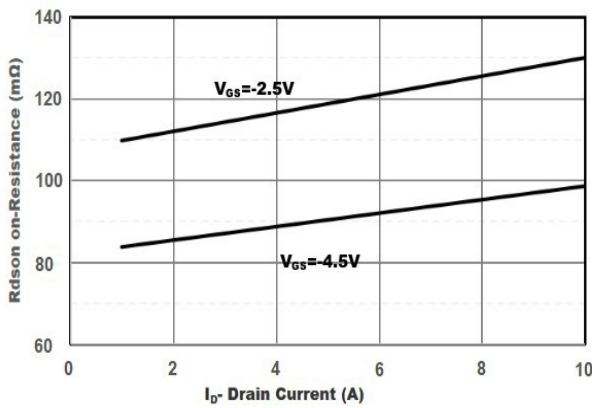


Figure5. Drain-Source on Resistance

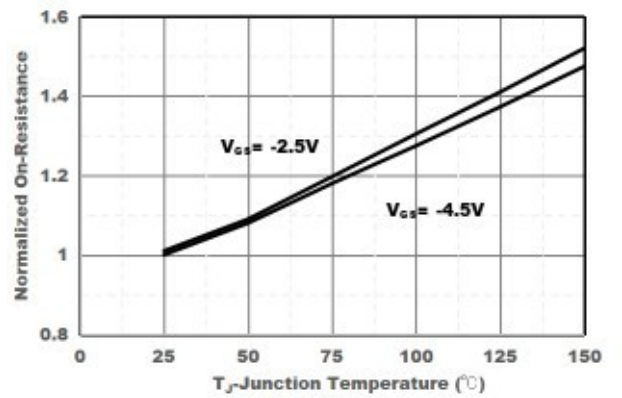


Figure6. Drain-Source on Resistance

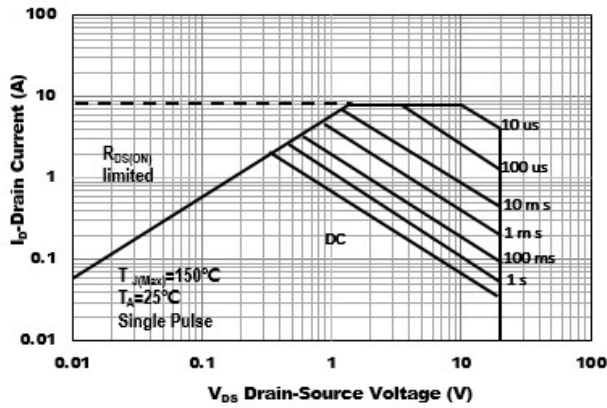


Figure7. Safe Operation Area

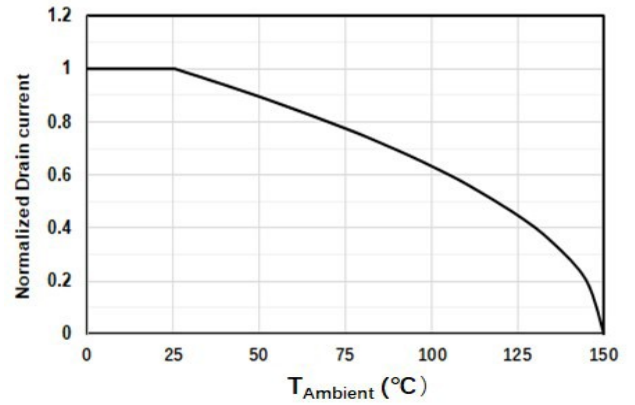


Figure8. Drain Current vs Ambient temperature

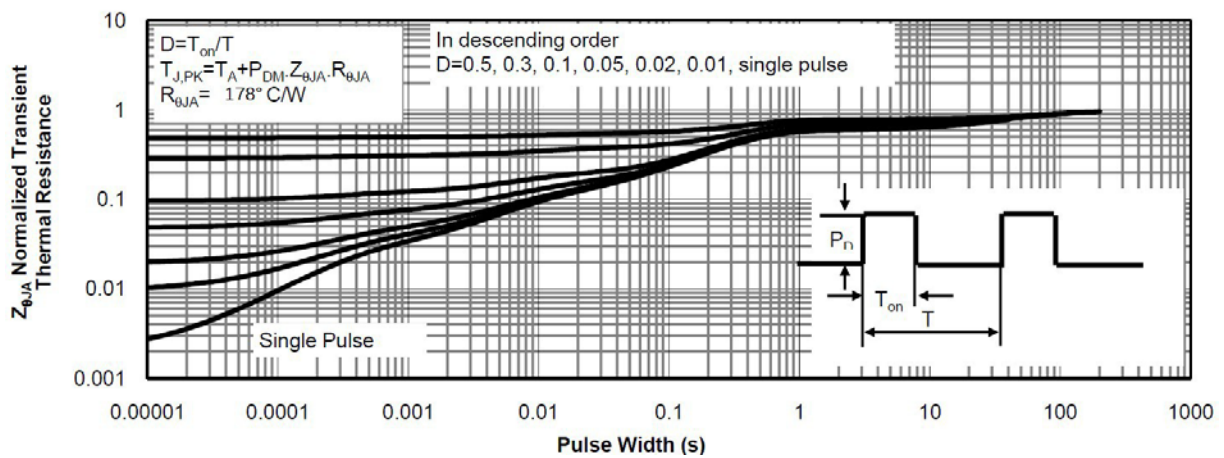


Figure9. Normalized Maximum Transient Thermal Impedance

▪ SOT-23 Package information

