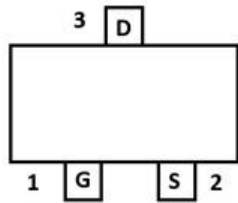
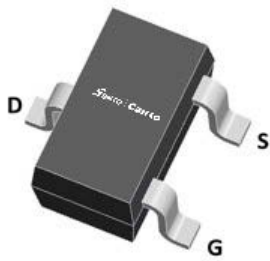
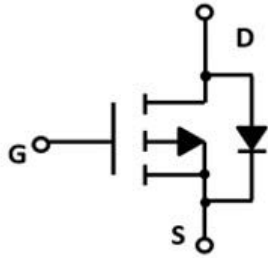


P-Channel Enhancement Mode Field Effect Transistor



SOT-323



Product Summary

- V_{DS} -19V
- I_D -1.5A
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) < 108 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-2.5V$) < 130 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-1.8V$) < 230 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}	-19	V
Gate-source Voltage		V_{GS}	± 10	V
Drain Current	$T_A=25^\circ C$ @ Steady State	I_D	-1.5	A
	$T_A=70^\circ C$ @ Steady State		-1.2	
Pulsed Drain Current ^A		I_{DM}	-8	A
Total Power Dissipation @ $T_A=25^\circ C$		P_D	0.25	W
Thermal Resistance Junction-to-Ambient ^B		$R_{\theta JA}$	500	$^\circ C/W$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~+150	$^\circ C$

■ Ordering Information

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SCL2301G	F2	2301G.	3000	30000	120000	7" reel

■ Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =-250μA	-19			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-19V,V _{GS} =0V,T _C =25℃			-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±10V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-250μA	-0.4	-0.62	-1.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = -4.5V, I _D =-1.5A		90	108	mΩ
		V _{GS} = -2.5V, I _D =-1.5A		105	130	
		V _{GS} = -1.8V, I _D =-1.5A		140	230	
Diode Forward Voltage	V _{SD}	I _S =-1.5A,V _{GS} =0V		-0.8	-1.2	V
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-10V,V _{GS} =0V,f=1MHZ		327		pF
Output Capacitance	C _{oss}			62		
Reverse Transfer Capacitance	C _{rss}			55		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-4.5V,V _{DS} =-10V,I _D =-1.5A		3.9		nC
Gate Source Charge	Q _{gs}			0.7		
Gate Drain Charge	Q _{gd}			0.9		
Reverse Recovery Charge	Q _{rr}	I _F =-1.5A, di/dt=100A/us		2.3		
Reverse Recovery Time	t _{rr}			27		
Turn-on Delay Time	t _{D(on)}	V _{GS} =-4.5V,V _{DD} =-10V, I _D =-1A, R _{GEN} =2.5Ω		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. Pulse Test: Pulse Width ≤ 300us, Duty cycle ≤ 2%.

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

■ Typical Performance Characteristics

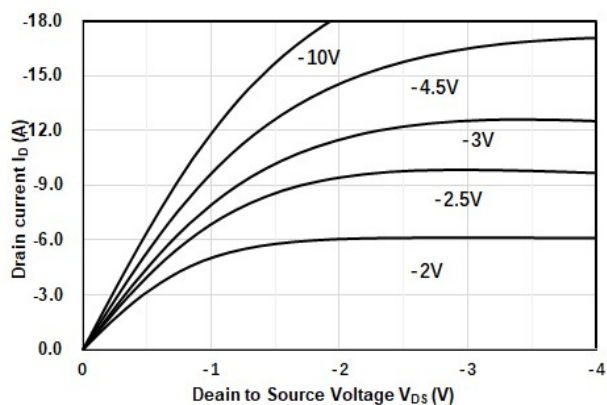


Figure1. Output Characteristics

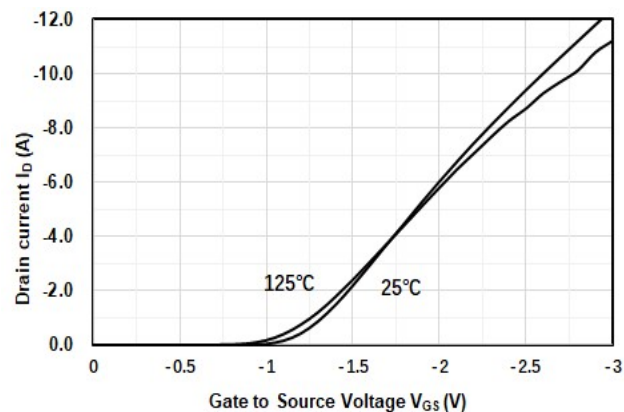


Figure2. Transfer Characteristics

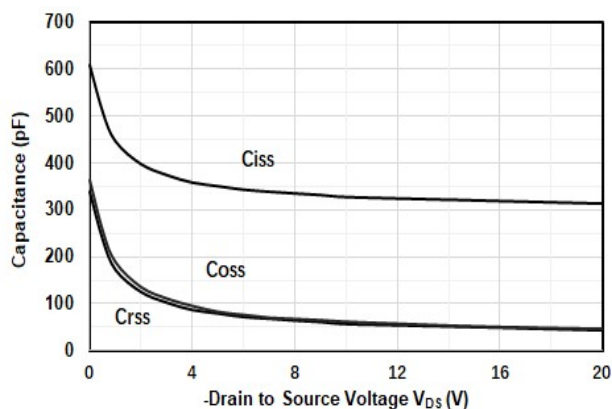


Figure3. Capacitance Characteristics

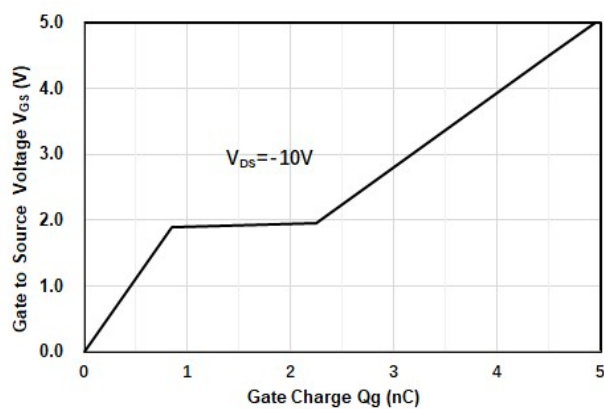


Figure4. Gate Charge

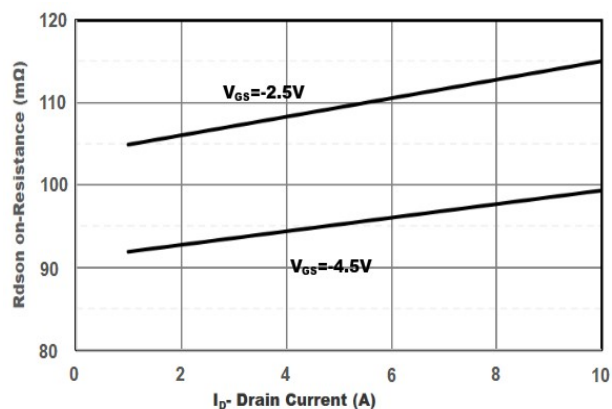


Figure5. Drain-Source on Resistance

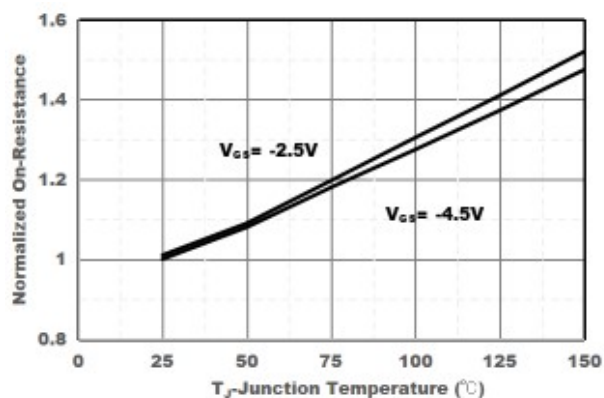


Figure6. Drain-Source on Resistance

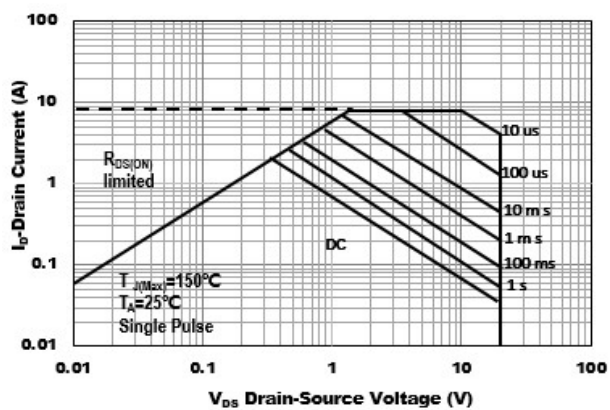


Figure7. Safe Operation Area

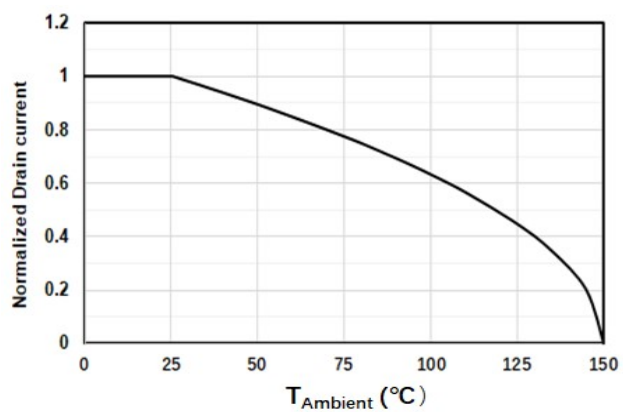
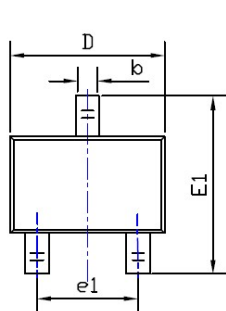
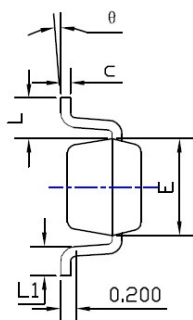


Figure8. Drain Current vs Ambient temperature

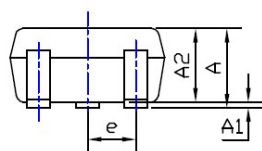
■ SOT-323 Package Information



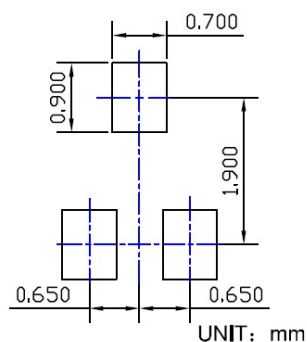
TOP VIEW



SIDE VIEW



SIDE VIEW



SUGGESTED SOLDER PAD LAYOUT

SYMBOL	DIMENSIONS					
	INCHES			Millimeter		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.035	---	0.043	0.900	---	1.100
A1	0.000	---	0.004	0.000	---	0.100
A2	0.035	0.037	0.039	0.900	0.950	1.000
b	0.006	0.012	0.016	0.150	0.300	0.400
c	0.004	---	0.010	0.100	---	0.250
D	0.071	0.079	0.087	1.800	2.000	2.200
E	0.045	0.049	0.053	1.150	1.250	1.350
E1	0.085	0.091	0.096	2.150	2.300	2.450
e	0.026TYP			0.650TYP		
e1	0.047	0.051	0.055	1.200	1.300	1.400
L	0.021REF			0.525REF		
L1	0.010	0.014	0.018	0.260	0.360	0.460
theta	0°	---	8°	0°	---	8°

NOTE:

- 1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
- 2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
- 3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

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