SE7401U
20V P-Channel Enhancement-Mode MOSFET

Revision:B

General Description

The MOSFETs from SINO-IC provide the best combination of fast switching, low on-resistance and cost-effectiveness.

General Description

Thigh Density Cell Design For Ultra Low On-Resistance Fully Characterized Avalanche Voltage and Current Improved Shoot-Through FOM

- Simple Drive Requirement
- Small Package Outline
- Surface Mount Device
- Pb-Free package is available

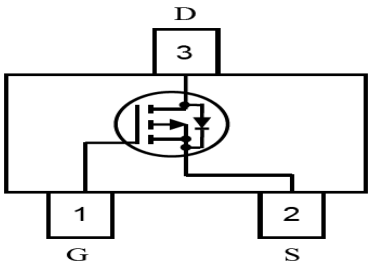
Features

For a single mosfet

- V_{DS} = -20 V
- $R_{DS(ON)}$ = 120mΩ @ V_{GS}=-4.50V @Ids=-2.0A
- $R_{DS(ON)}$ = 150mΩ @ V_{GS}=-2.50V @Ids=-1.8A
- $R_{DS(ON)}$ = 170mΩ @ V_{GS}=-1.80V @Ids=-1.8A

Pin configurations

See Diagram below



SOT323

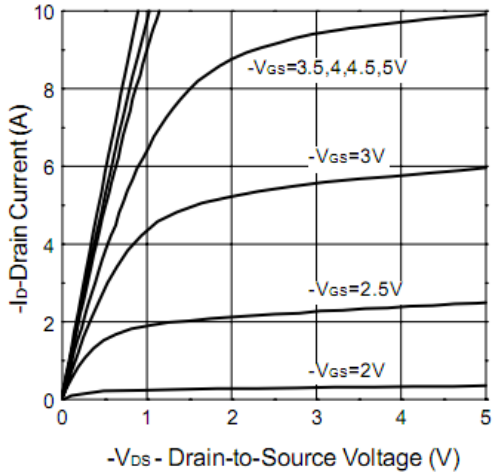
Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±8	V
Drain Current (Note 1)	Continuous	I_D	-2.2	A
	Pulsed		-7	
Total Power Dissipation	@T_A=25°C	P_D	0.9	W
	@T_A=75°C		0.57	
Operating Junction Temperature Range		T_J	-55 to 150	°C

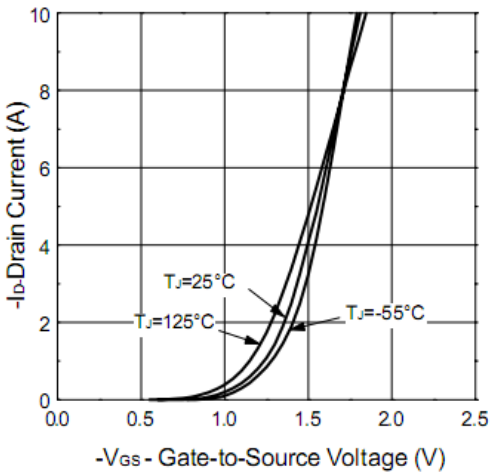
Electrical Characteristics (T_J=25°C unless otherwise noted)						
Symbol	**Parameter**	**Test Conditions**	**Min**	**Typ**	**Max**	**Units**
OFF CHARACTERISTICS (Note 2)						
BV_{DSS}	Drain-Source Breakdown Voltage	I_D=-250μA, V_{GS}=0 V	-20			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=20 V, V_{GS}=0 V			-1	μA
I_{GSS}	Gate-Body leakage current	V_{DS}=0 V, V_{GS}=±10 V			±0.1	μA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS} I_D=-250μA	-0.4		-0.9	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=-4.5V, I_D=-2.0 A	-	100	120	mΩ
		V_{GS}=-2.5V, I_D=-1.8A	-	120	150	
		V_{GS}=-1.8V, I_D=-1.8A		140	170	
g_{FS}	Forward Transconductance	V_{DS}=5V, I_D=2A		6.5		S
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=10V, f=1MHz		373		pF
C_{oss}	Output Capacitance			138		pF
C_{rss}	Reverse Transfer Capacitance			52		pF
SWITCHING PARAMETERS						
Q_g	Total Gate Charge[2]	V_{GS}=-4.5V, V_{DS} =-6V, I_D=-2.0A		15.2		nC
Q_{gs}	Gate Source Charge			5.5		nC
Q_{gd}	Gate Drain Charge			2.7		nC
$t_{d(on)}$	Turn-On DelayTime[2]	V_{GS}=-4.5V, V_{DD}=-6V, R_L=6Ω, R_G=6Ω ID=-1A			17.3	ns
$t_{d(off)}$	Turn-Off DelayTime				36.0	
$t_{d(r)}$	Turn-On Rise Time				3.7	
$t_{d(f)}$	Turn-Off Fall Time				3.2	

Typical Characteristics

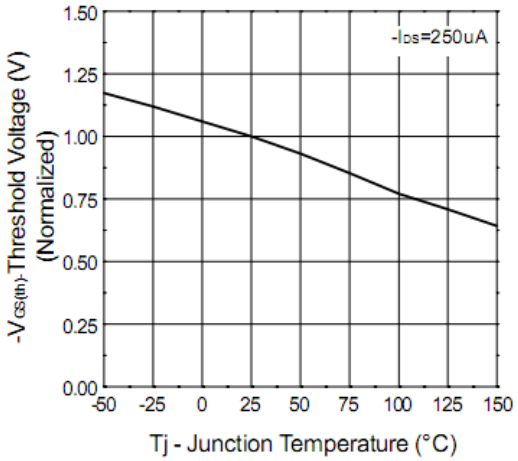
Output Characteristics



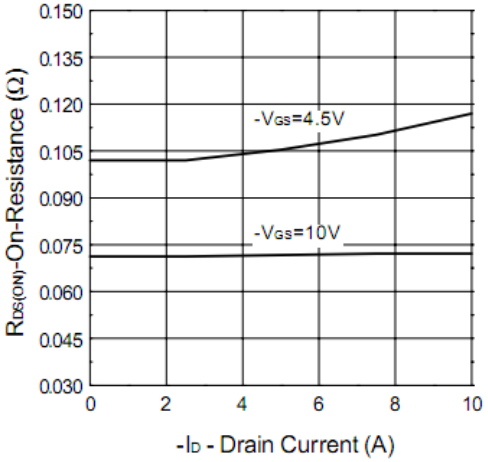
Transfer Characteristics



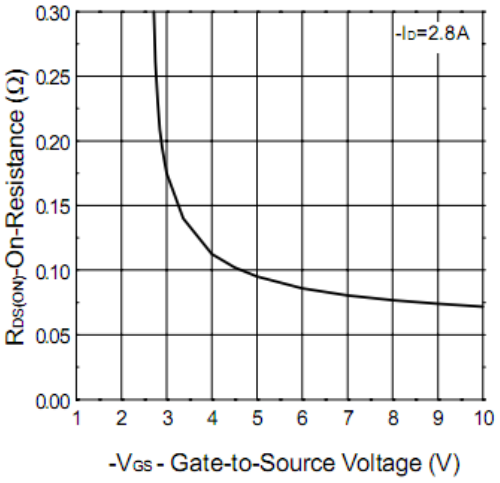
Threshold Voltage vs. Junction Temperature



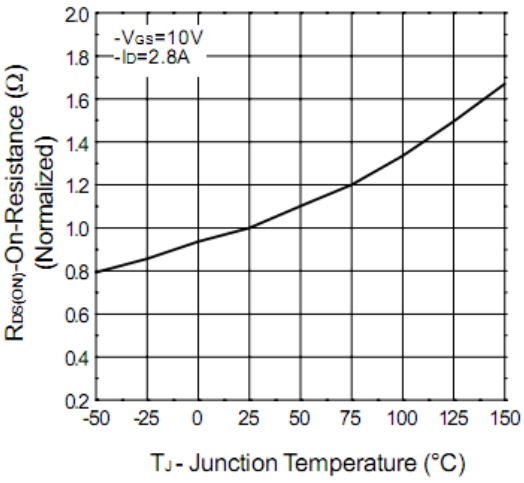
On-Resistance vs. Drain Current



On-Resistance vs. Gate-to-Source Voltage

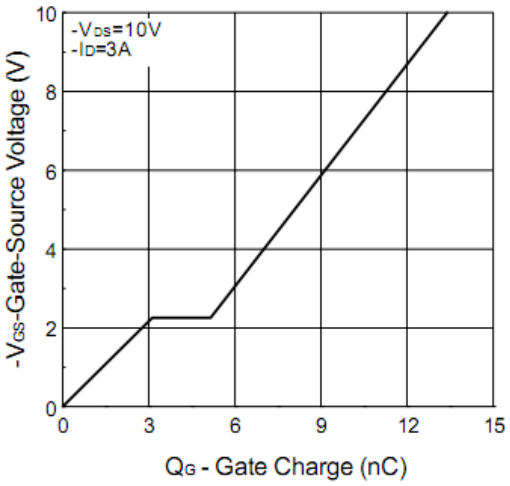


On-Resistance vs. Junction Temperature

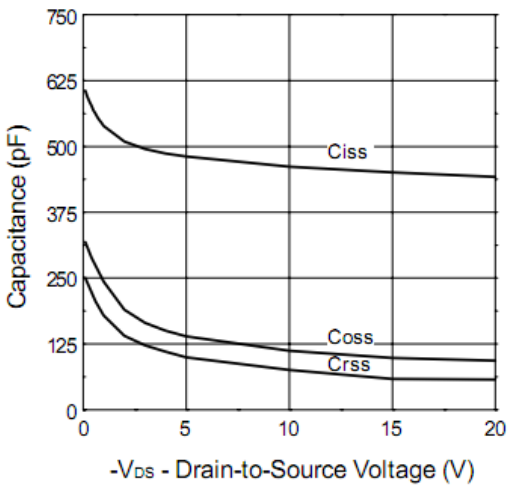


Typical Characteristics

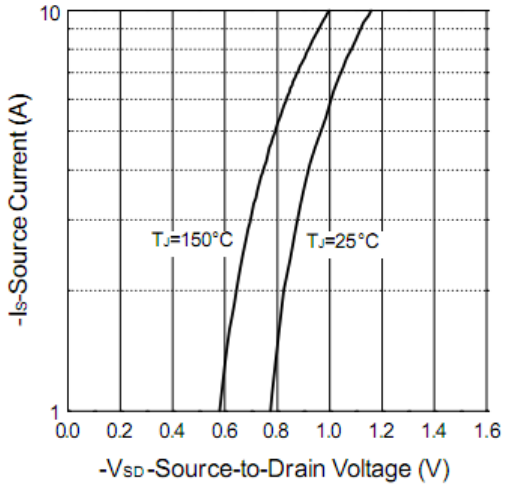
Gate Charge



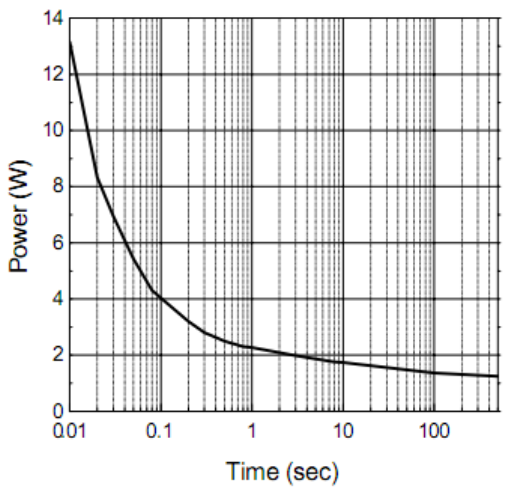
Capacitance



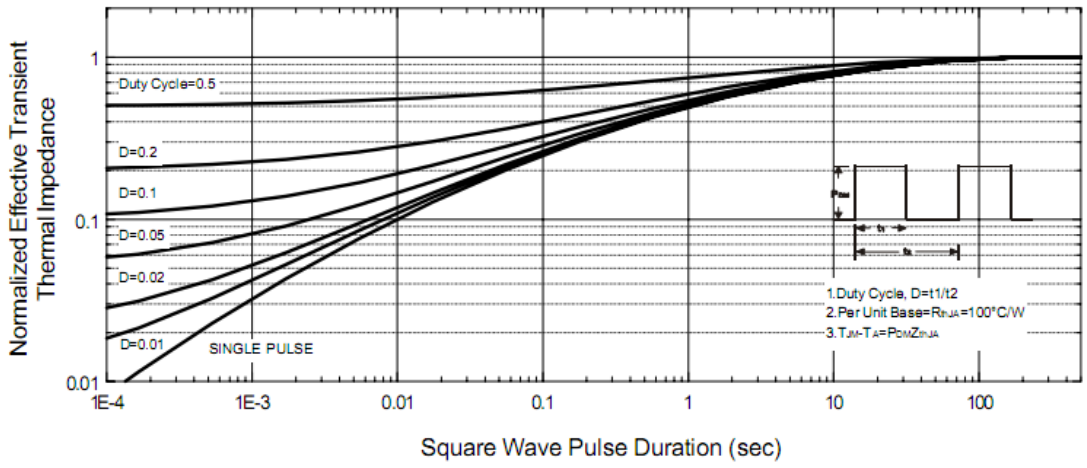
Source-Drain Diode Forward Voltage



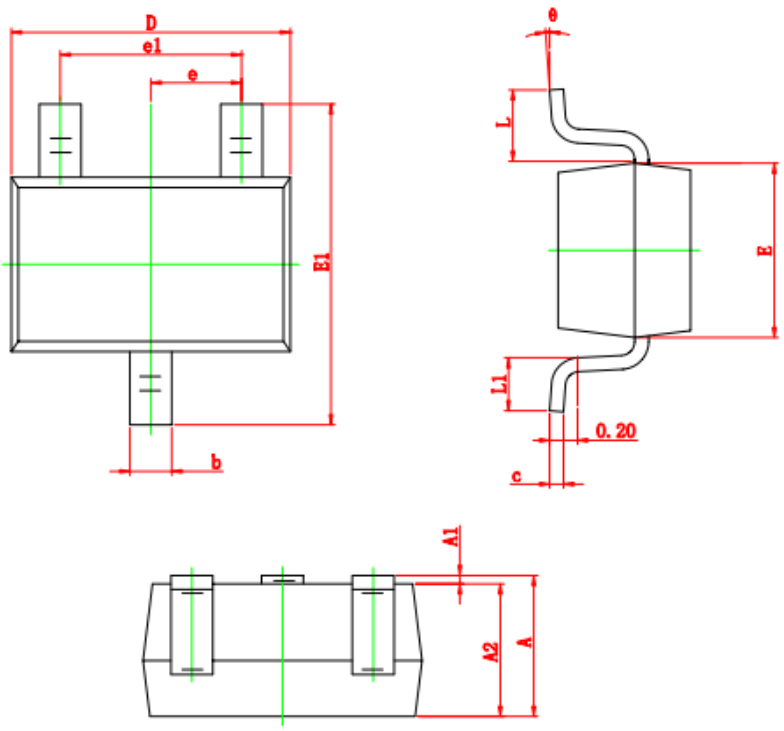
Single Pulse Power



Normalized Thermal Transient Impedence, Junction to Ambient



Packaging Information(SOT323)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

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