

SE2301
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

High 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

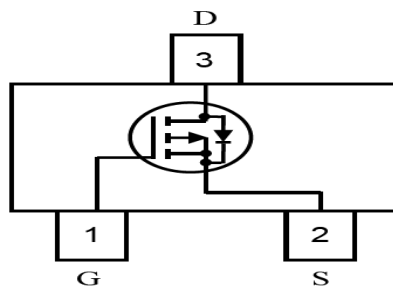
Features

For a single mosfet

- $V_{DS} = -20\text{ V}$
- $R_{DS(ON)} = 100\text{m}\Omega @ V_{GS}=-4.50\text{V} @ I_{ds}=-2.8\text{A}$
- $R_{DS(ON)} = 150\text{m}\Omega @ V_{GS}=-2.50\text{V} @ I_{ds}=-2.0\text{A}$

Pin configurations

See Diagram below

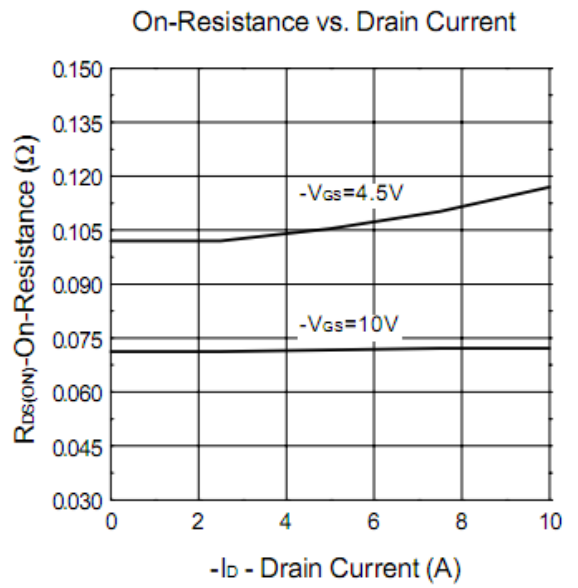
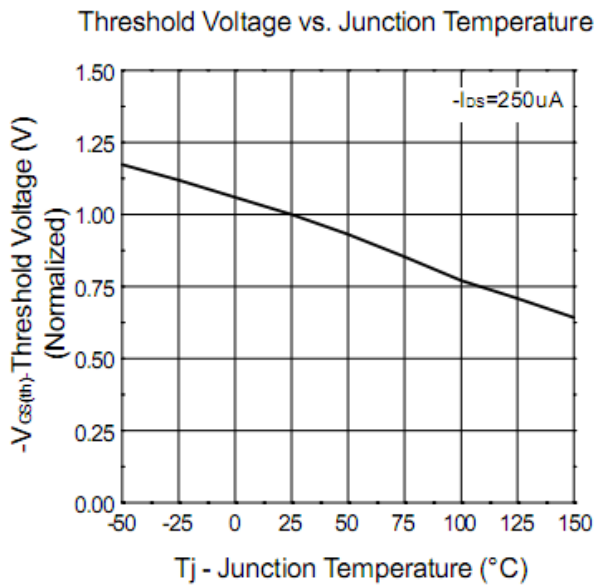
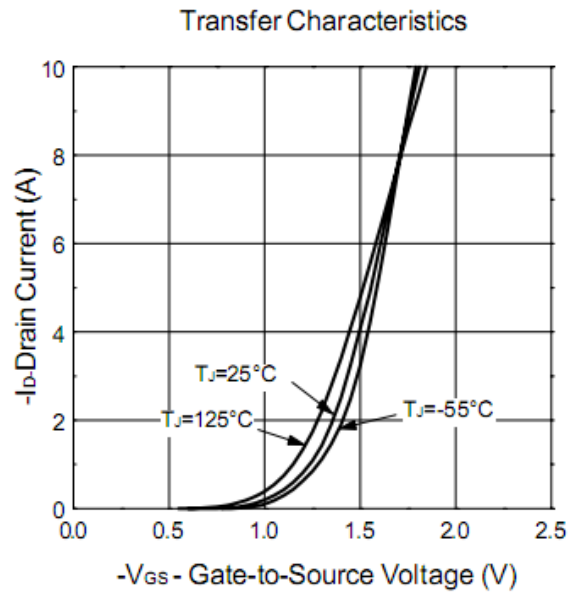
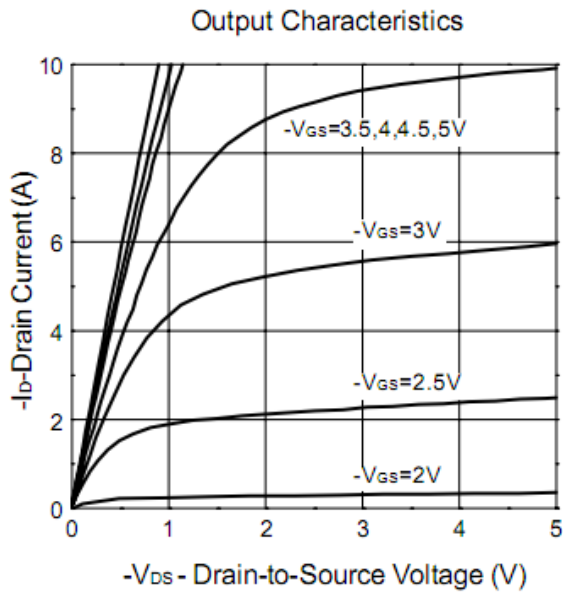


Absolute Maximum Ratings

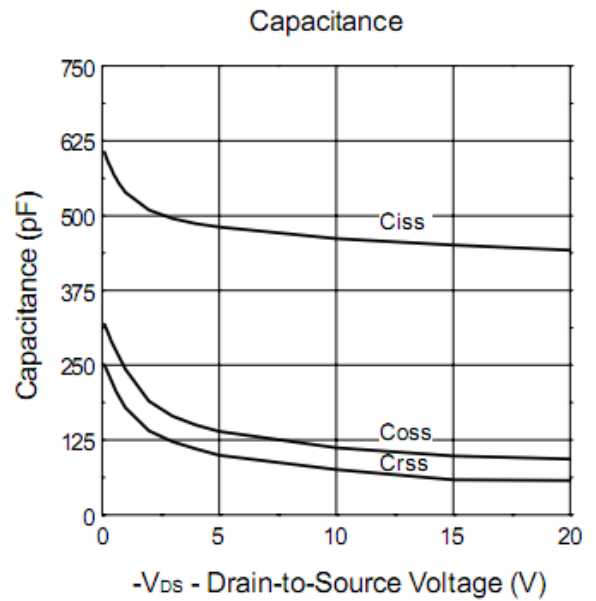
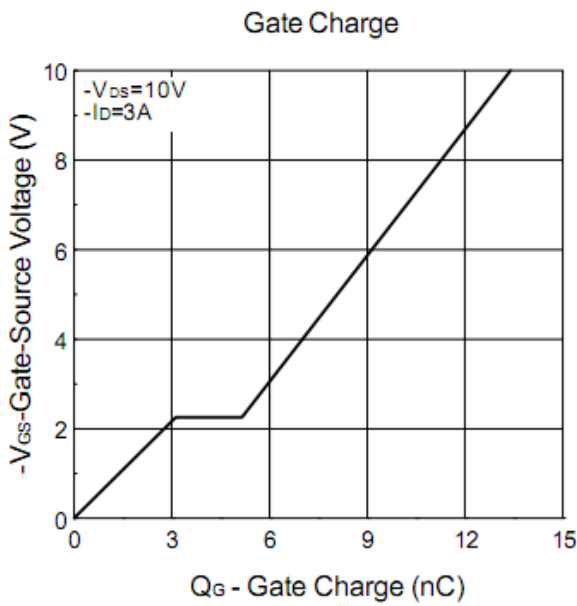
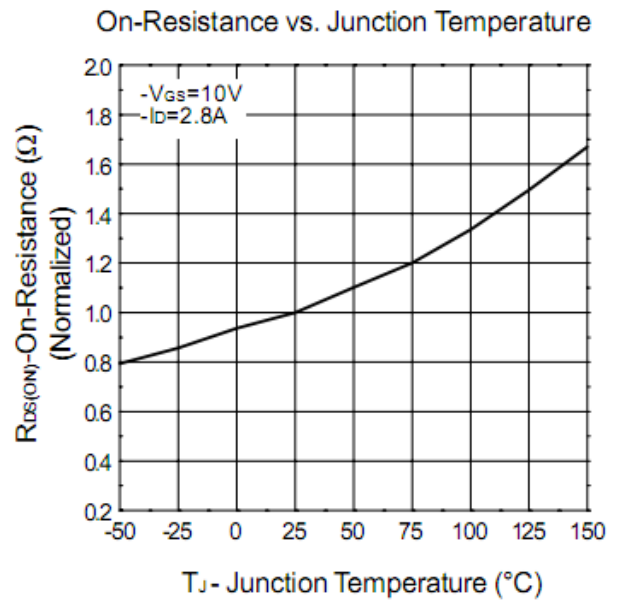
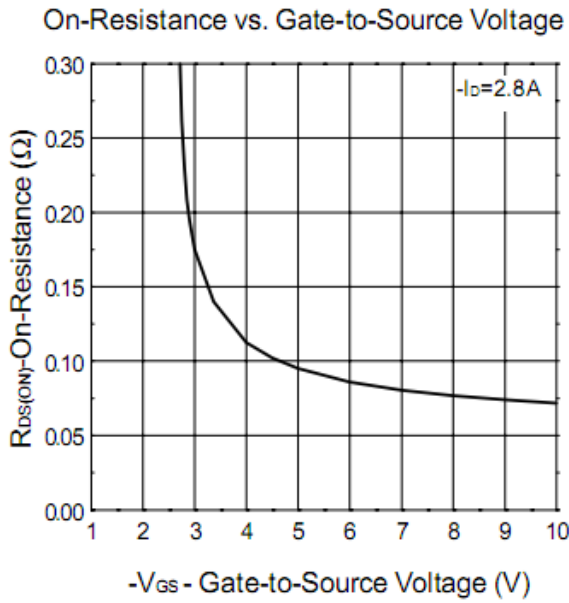
Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	± 8	V
Drain Current (Note 1)	Continuous	I_D	-2.8	A
	Pulsed		-8	
Total Power Dissipation	@ $T_A=25^\circ\text{C}$	P_D	0.9	W
	@ $T_A=75^\circ\text{C}$		0.57	
Operating Junction Temperature Range		T_J	-55 to 150	$^\circ\text{C}$

Electrical Characteristics (T _J =25°C unless otherwise noted)						
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS (Note 2)						
B _V DSS	Drain-Source Breakdown Voltage	I _D =-250 μ A, V _{GS} =0 V	-20			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =20 V, V _{GS} =0 V			-1	μ A
I _{GSS}	Gate-Body leakage current	V _{DS} =0 V, V _{GS} =±10 V			±0.1	μ A
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} I _D =-250 μ A	-0.45			V
R _{DS(on)}	Static Drain-Source On-Resistance ²	V _{GS} =-4.50V, I _D =-2.8 A	-	69	100	m Ω
		V _{GS} =-2.5V, I _D =-2.0A	-	83	150	
g _{FS}	Forward Transconductance	V _{DS} =5V, I _D =4.5A		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 =-2.8A		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 =6 Ω, R _G =6 Ω I _D =-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	

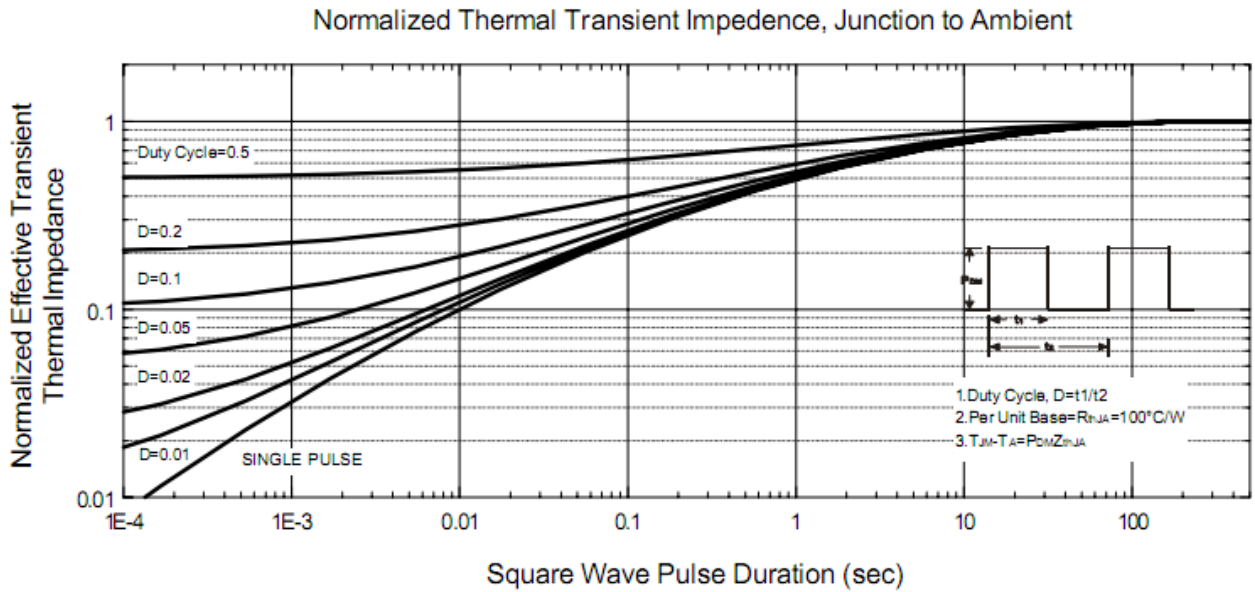
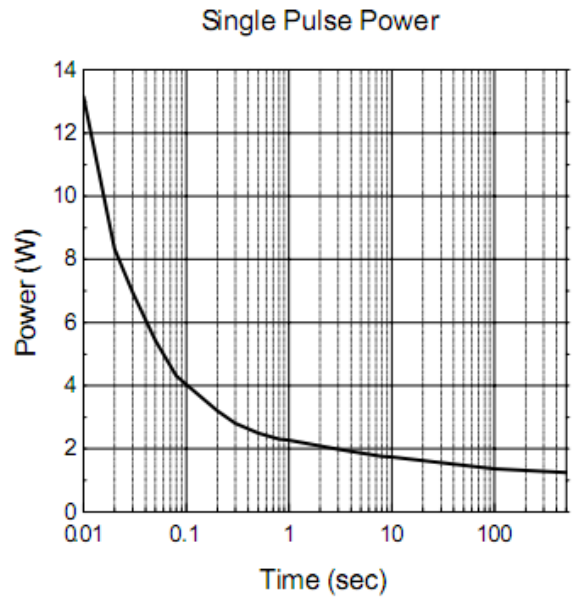
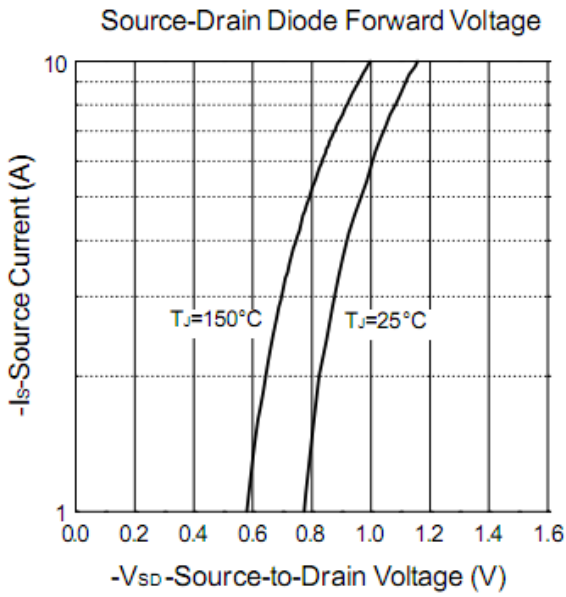
Typical Characteristics



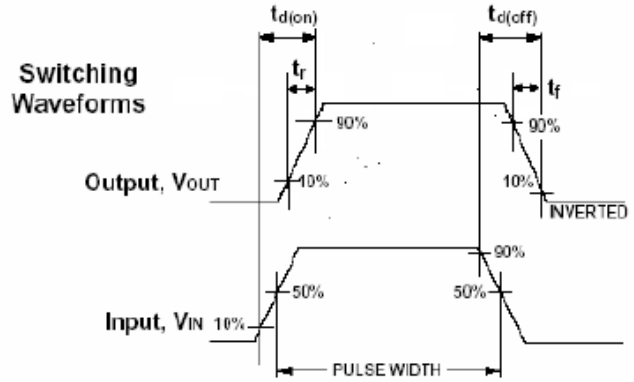
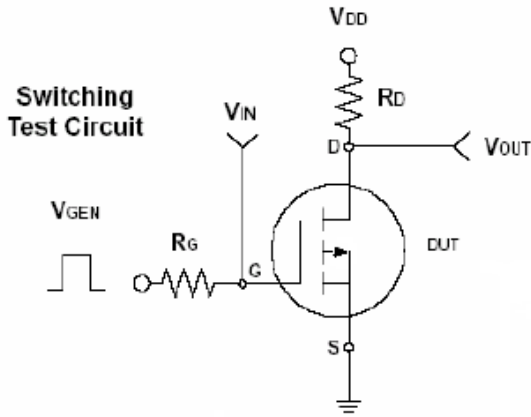
Typical Characteristics



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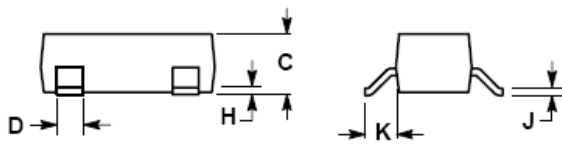
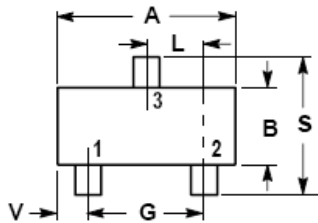


Typical Characteristics



Packaging Information

SOT-23



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

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