SE2301-30
30V P-Channel Enhancement-Mode MOSFET

Revision:A

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

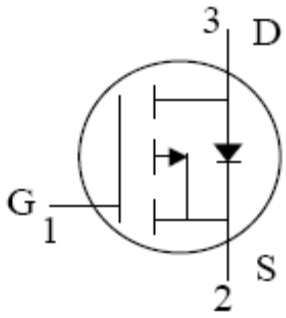
Features

For a single mosfet

- V_{DS} = -30 V
- ID=-4.2A(VGS=-10V)
- $R_{DS(ON)}$ <55mΩ @ V_{GS}=-10V
- $R_{DS(ON)}$ <70mΩ @ V_{GS}=-4.5V
- $R_{DS(ON)}$ <125mΩ @ V_{GS}=-2.5V

Pin configurations

See Diagram below

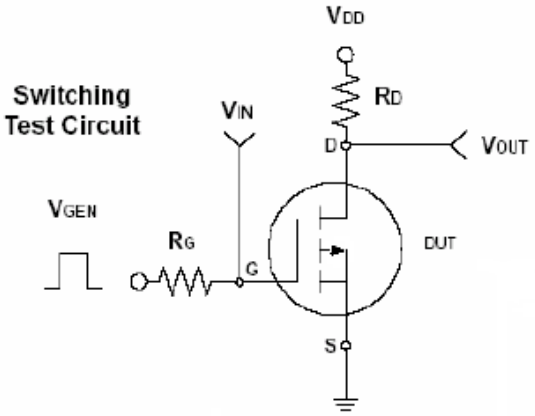


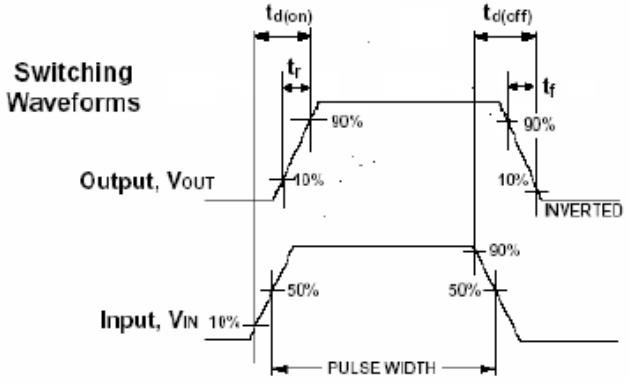
Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±12	V
Drain Current (Note 1)	Continuous	I_D	-4.2	A
	Pulsed		-30	
Total Power Dissipation	@T_A=25°C	P_D	1.4	W
	@T_A=75°C		1	
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	-30			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-24 V, V_{GS}=0 V			-1	μA
I_{GSS}	Gate-Body leakage current	V_{DS}=0 V, V_{GS}=±12V			±100	μA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS} I_D=-250μA	-0.8	-1.1	-1.3	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=-10V, I_D=-4.2 A	-	43	52	mΩ
		V_{GS}=-4.50V, I_D=-4 A		55	70	
		V_{GS}=-2.5V, I_D=-1.0A	-	82	125	
g_{FS}	Forward Transconductance	V_{DS}=-5V, I_D=-4.5A		12		S
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=-10V, f=1MHz		455		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}=-15V, I_D=-4A		11.2		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}=-10V, V_{DS}=-15V, R_L=6Ω, R_G=6Ω ID=-1A			15.3	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





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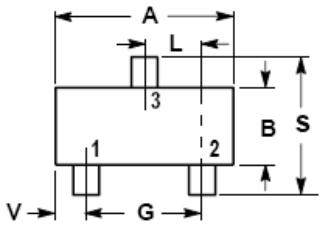

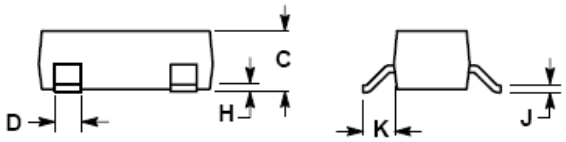

NOTES:

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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