DESCRIPTION

The SPN1423 is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology.

This high density process is especially tailored to minimize on-state resistance.

These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management and other battery powered circuits where high-side switching , and low in-line power loss are needed in a very small outline surface mount package.

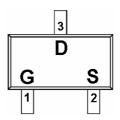
APPLICATIONS

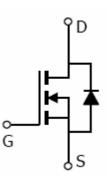
- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

FEATURES

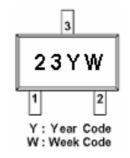
- 20V/2.8A, RDS(ON)= $90m\Omega@VGS=4.5V$
- $20V/2.2A,RDS(ON) = 100m\Omega@VGS = 2.5V$
- Super high density cell design for extremely low RDS (ON)
- Exceptional on-resistance and maximum DC current capability
- ◆ SOT-323 (SC-70) package design

PIN CONFIGURATION (SOT-323; SC-70)





PART MARKING





PIN DESCRIPTIONPinSymbolDescription1GGate2SSource3DDrain

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN1423S32RG	SOT-323	23YW

Week Code : A ~ Z(1 ~ 26) ; a ~ z(27 ~ 52) SPN1423S32RG : Tape Reel ; Pb – Free

ABSOULTE MAXIMUM RATINGS

(TA=25 Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		VDSS	20	V
Gate –Source Voltage		VGSS	±12	V
Continuous Droin Current(Tr=150)	Та=25	In	2.8	A
Continuous Drain Current(TJ=150)	Та=70	– Id	2.2	A
Pulsed Drain Current		Idm	10	А
Continuous Source Current(Diode Conduction)		Is	1.6	А
Downer Dissignation	Та=25	Dn	0.33	W 7
Power Dissipation	Та=70	– Pd	0.21	W
Operating Junction Temperature		TJ	150	
Storage Temperature Range		Tstg	-55/150	
Thermal Resistance-Junction to Ambient		Reja	100	/W



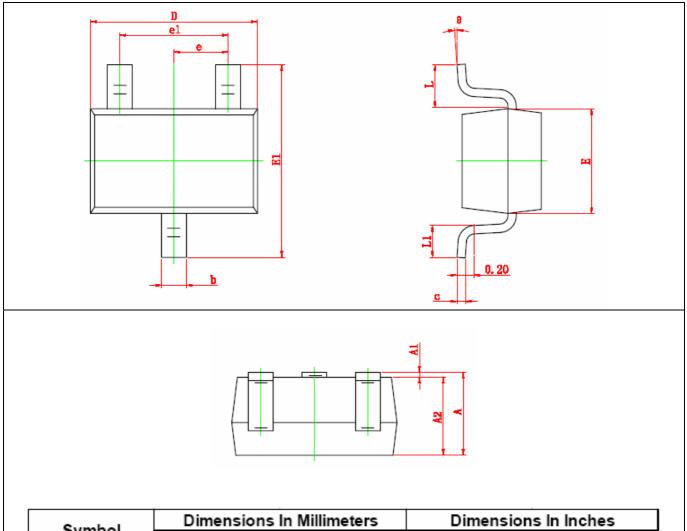
ELECTRICAL CHARACTERISTICS

(TA=25 Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Тур	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V(BR)DSS	Vgs=0V,Id=250uA	20			V
Gate Threshold Voltage	VGS(th)	VDS=VGS,ID=250uA	0.45		1.2	V
Gate Leakage Current	Igss	VDS=0V,VGS=±12V			±100	nA
Zero Gate Voltage Drain Current	Idss	VDS=20V,VGS=0V VDS=20V,VGS=0V TJ=55			1 10	uA
On-State Drain Current	ID(on)	VDs 5V,VGs=4.5V VDs 5V,VGs=2.5V	5 4			A
Drain-Source On-Resistance	RDS(on)	VGS=4.5V,ID=2.8A VGS=2.5V,ID=2.2A		0.055 0.075	0.090 0.100	Ω
Forward Transconductance	gfs	VDS=5V,ID=2.8A		10		S
Diode Forward Voltage	Vsd	Is=1.6A,VGs=0V		0.85	1.2	V
Dynamic						
Total Gate Charge	Qg			5.4	10	
Gate-Source Charge	Qgs	$V_{DS}=10V, V_{GS}=4.5V$ $I_{D}=2.8A$		0.65		nC
Gate-Drain Charge	Q_{gd}	10 2.011		1.4		
Input Capacitance	Ciss			340		pF
Output Capacitance	Coss	VDS=10V,VGS=0V f=1MHz		115		
Reverse Transfer Capacitance	Crss	1 1101112		33		
Turn-On Time	td(on)			12	25	
Turn-On Time	tr	$V_{DD}=10V, RL=5.5\Omega$		36	60	- ns
Turn-Off Time	td(off)	ID=2.8A,VGEN=4.5V $RG=6\Omega$		34	60	
	tf			10	25	



SOT-323 PACKAGE OUTLINE



Dimensions In Millimeters		Dimensions In Inches		
Min	Max	Min	Max	
0.900	1.100	0.035	0.043	
0.000	0.100	0.000	0.004	
0.900	1.000	0.035	0.039	
0.200	0.400	0.008	0.016	
0.080	0.150	0.003	0.006	
2.000	2.200	0.079	0.087	
1.150	1.350	0.045	0.053	
2.150	2.450	0.085	0.096	
0.650	0.650 TYP		6 TYP	
1.200	1.400	0.047	0.055	
0.525 REF		0.021 REF		
0.260	0.460	0.010	0.018	
0°	8°	0°	8°	
	Min 0.900 0.000 0.900 0.200 0.080 2.000 1.150 2.150 0.650 1.200 0.525 0.260	Min Max 0.900 1.100 0.000 0.100 0.900 1.000 0.900 1.000 0.200 0.400 0.080 0.150 2.000 2.200 1.150 1.350 2.150 2.450 0.650 TYP 1.200 1.400 0.525 REF 0.260 0.460	Min Max Min 0.900 1.100 0.035 0.000 0.100 0.000 0.900 1.000 0.035 0.200 0.400 0.008 0.080 0.150 0.003 2.000 2.200 0.079 1.150 1.350 0.045 2.150 2.450 0.085 0.650 TYP 0.026 1.200 1.400 0.047 0.525 REF 0.021 0.260 0.460 0.010	

2005/04/01 Preliminary



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