



SPN2322

Dual N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN2322 is the Dual 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 notebook computer power management and other battery powered circuits where high-side switching, low in-line power loss, and resistance to transients are needed .

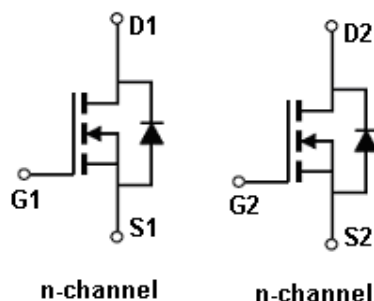
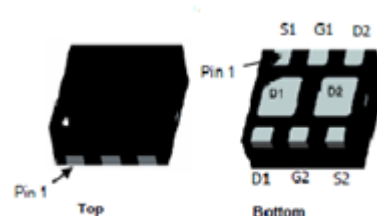
FEATURES

- ◆ 20V/4.0A, $R_{DS(ON)}=26m\Omega@V_{GS}=4.5V$
- ◆ 20V/3.0A, $R_{DS(ON)}=35m\Omega@V_{GS}=2.5V$
- ◆ 20V/2.0A, $R_{DS(ON)}=50m\Omega@V_{GS}=1.8V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ TDFN2x2-6L package design

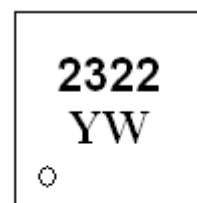
APPLICATIONS

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

PIN CONFIGURATION(TDFN2x2-6L)



PART MARKING



Y : Year Code
W: Week Code



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PIN DESCRIPTION

Pin	Symbol	Description
1	S1	Source 1
2	G1	Gate 1
3	D2	Drain 2
4	S2	Source 2
5	G2	Gate 2
6	D1	Drain 1
Exposed Backside Metal	D1/D2	Drain

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN2322TDN6RGB	TDFN2x2-6L	2322

※ SPN2322TDN6RGB : Tape Reel ; Pb – Free ; Halogen – Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V _{DSS}	20	V
Gate –Source Voltage		V _{GSS}	±12	V
Continuous Drain Current(T _J =150°C)	T _A =25°C	I _D	4.5	A
	T _A =70°C		4.5	
Pulsed Drain Current		I _{DM}	20	A
Continuous Source Current(Diode Conduction)		I _S	1.6	A
Power Dissipation	T _A =25°C	P _D	1.9	W
	T _A =70°C		1.2	
Operating Junction Temperature		T _J	-55/150	°C
Storage Temperature Range		T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient	T ≤ 5sec	R _{θJA}	65	°C/W
	Steady State		95	



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ELECTRICAL CHARACTERISTICS

(T_A=25°C Unless otherwise noted)

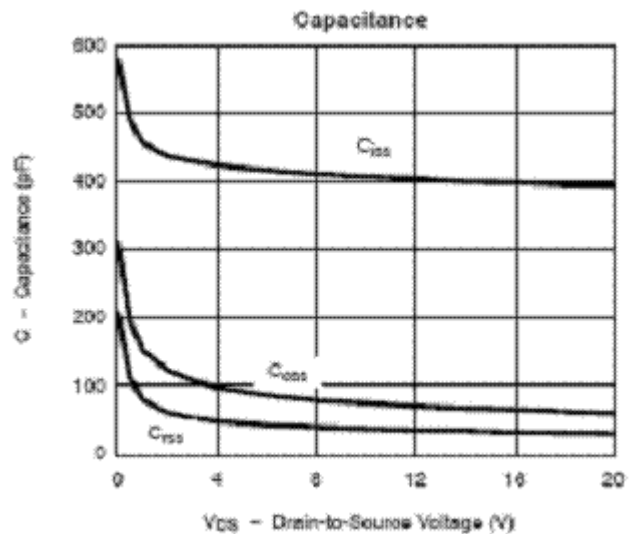
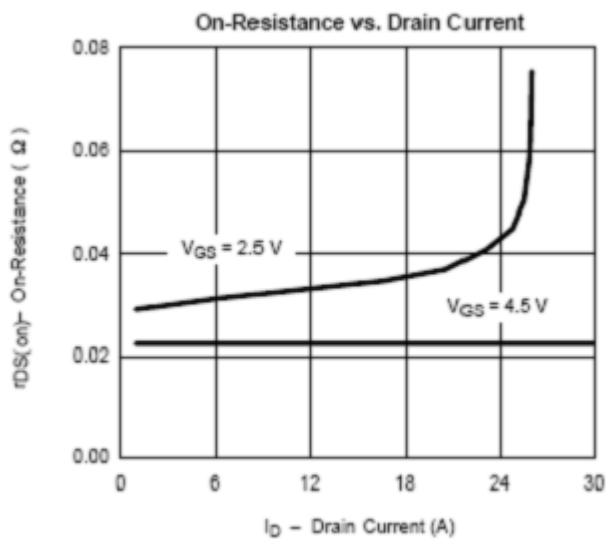
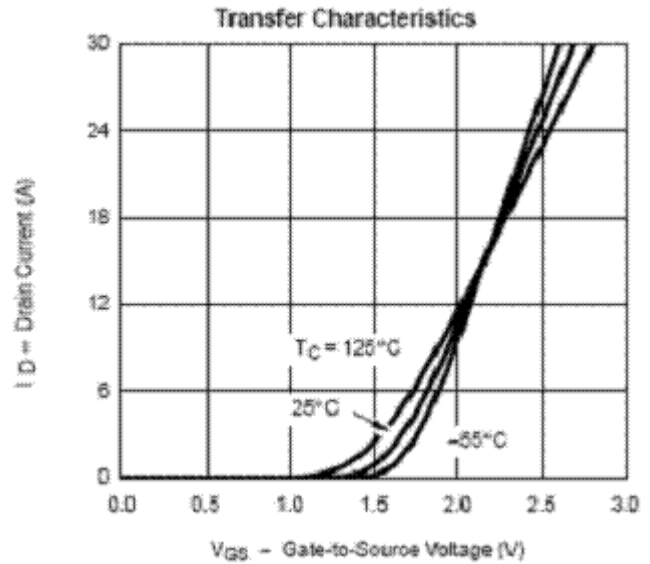
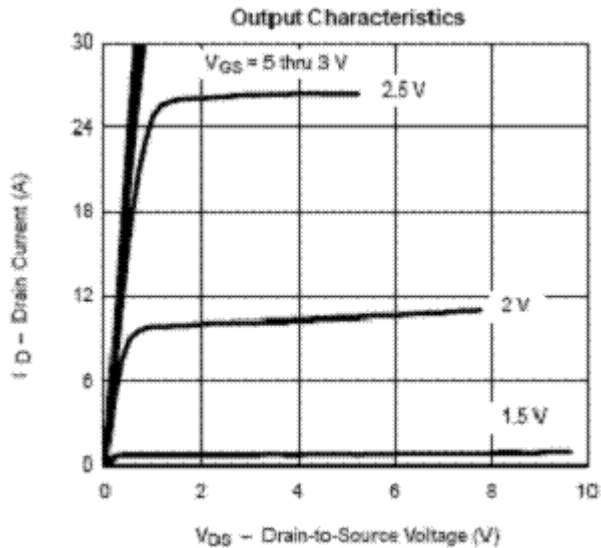
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.4		1.0	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
		V _{DS} =20V, V _{GS} =0V T _J =55°C			10	
On-State Drain Current	I _{D(on)}	V _{DS} ≤ 4.5V, V _{GS} =5V	15			A
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =4.0A			26	mΩ
		V _{GS} =2.5V, I _D =3.0A			35	
		V _{GS} =1.8V, I _D =2.0A			50	
Forward Transconductance	g _{fs}	V _{DS} =5V, I _D =-3.5A		10		S
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V			1.0	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =4.5V, I _D =4.0A		8.6		nC
Gate-Source Charge	Q _{gs}			1.37		
Gate-Drain Charge	Q _{gd}			2.3		
Input Capacitance	C _{iss}	V _{DS} =8V, V _{GS} =0V f=1MHz		575		pF
Output Capacitance	C _{oss}			84		
Reverse Transfer Capacitance	C _{rss}			22		
Turn-On Time	t _{d(on)}	V _{DD} =10V, I _D =3.0A, V _{GEN} =4.5V, R _G =3.3Ω		5.2		nS
	t _r			34		
Turn-Off Time	t _{d(off)}			23		
	t _f			9.2		



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TYPICAL CHARACTERISTICS

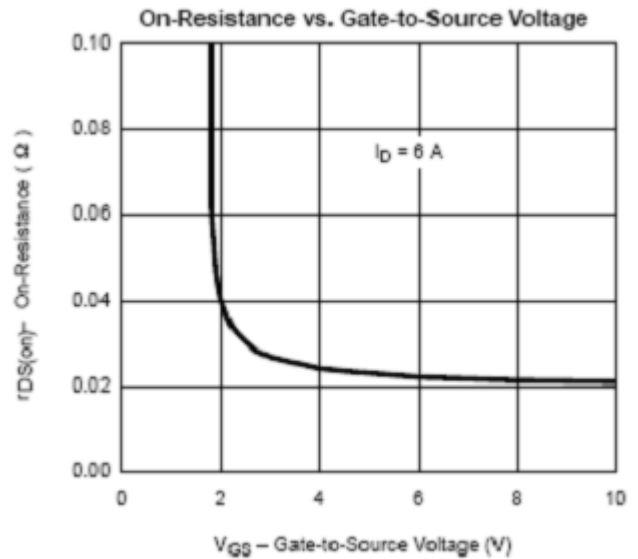
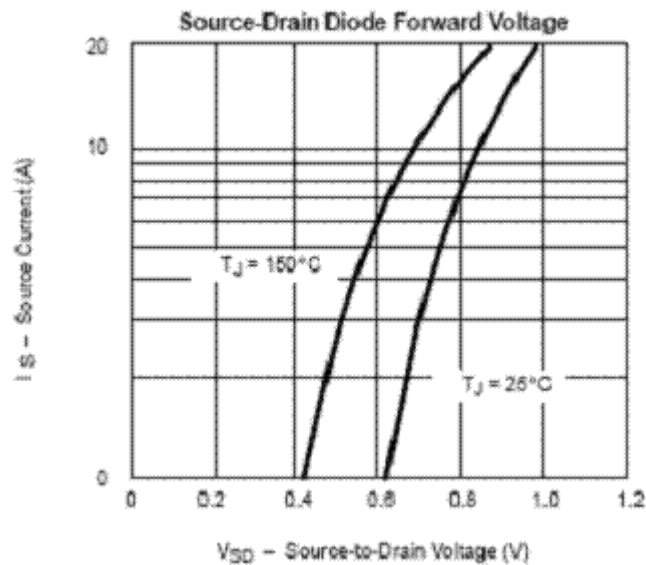
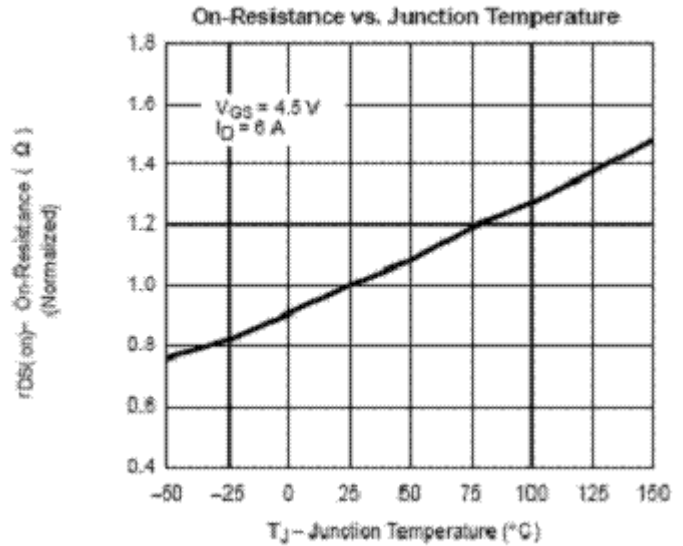
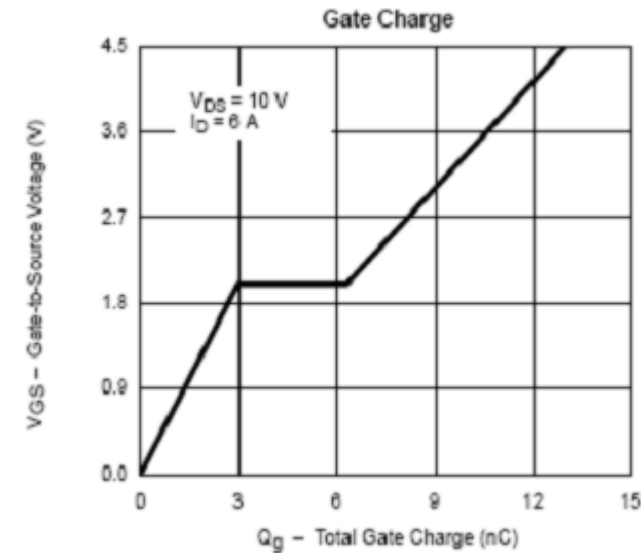




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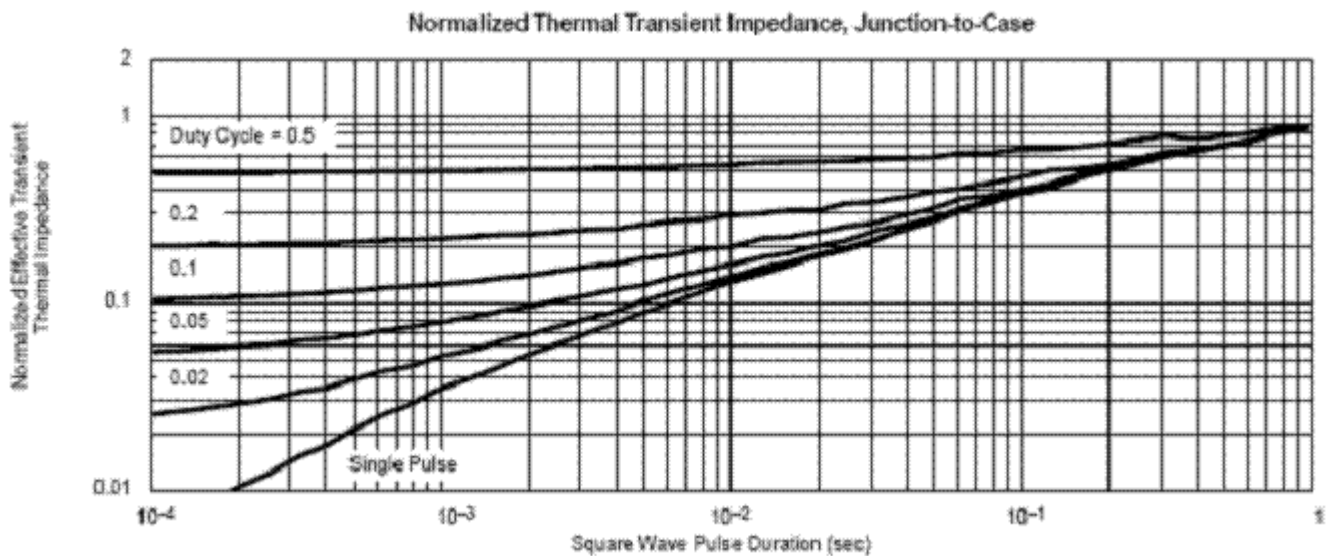
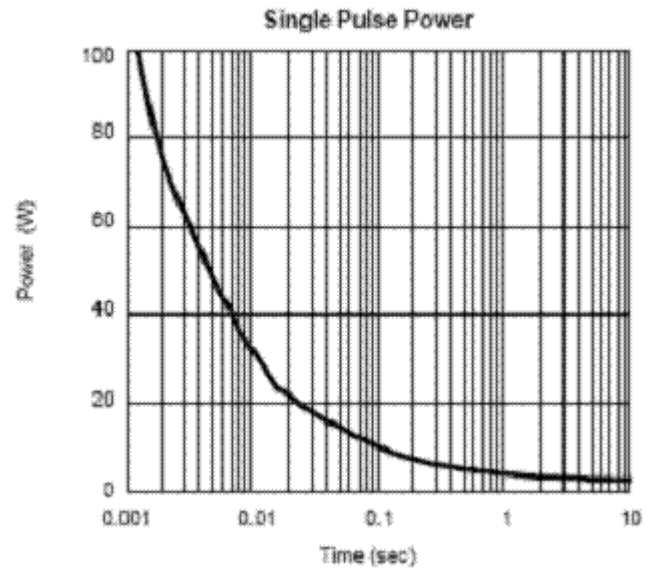
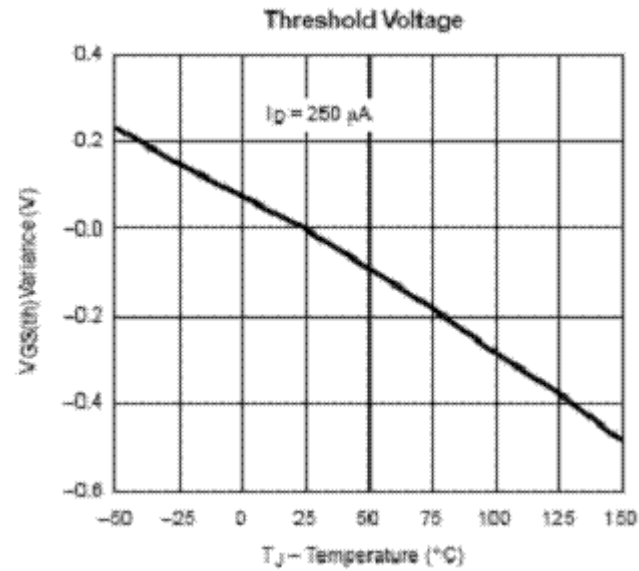




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TYPICAL CHARACTERISTICS





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