



SPP2327 P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP2327 is the P-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, and low in-line power loss are needed in a very small outline surface mount package.

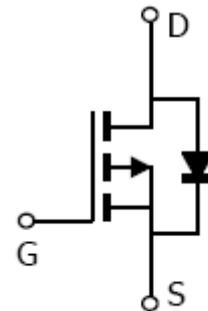
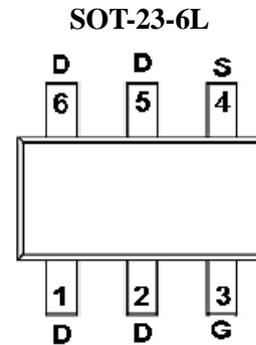
FEATURES

- ◆ $-100\text{V}/-0.6\text{A}, R_{\text{DS(ON)}}=650\text{m}\Omega @ V_{\text{GS}}=-10\text{V}$
- ◆ $-100\text{V}/-0.4\text{A}, R_{\text{DS(ON)}}=760\text{m}\Omega @ V_{\text{GS}}=-4.5\text{V}$
- ◆ Super high density cell design for extremely low $R_{\text{DS(ON)}}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-23-6L package design

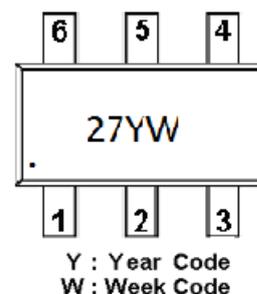
APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- Networking
- LED applications

PIN CONFIGURATION



PART MARKING





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PIN DESCRIPTION (SOT-23-6L)

Pin	Symbol	Description
1	D	Drain
2	D	Drain
3	G	Gate
4	S	Source
5	D	Drain
6	D	Drain

ORDERING INFORMATION

Part Number	Package	Part Marking
SPP2327S26RGB	SOT-23-6L	27

※ Week Code : A ~ Z(1 ~ 26) ; a ~ z(27 ~ 52)

※ SPP2327S26RGB : Tape Reel ; Pb – Free ; Halogen – Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit	
Drain-Source Voltage	V _{DSS}	-100	V	
Gate –Source Voltage	V _{GSS}	±20	V	
Continuous Drain Current(T _J =150°C)	I _D	TA=25°C	-840	mA
		TA=70°C	-670	
Pulsed Drain Current	I _{DM}	-3.36	A	
Continuous Source Current(Diode Conduction)	I _S	-1.0	A	
Power Dissipation	P _D	TA=25°C	1.25	W
		TA=70°C	0.8	
Operating Junction Temperature	T _J	150	°C	
Storage Temperature Range	T _{STG}	-55/150	°C	
Thermal Resistance-Junction to Ambient	R _{θJA}	120	°C/W	



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ELECTRICAL CHARACTERISTICS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.2	-1.8	-2.5	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-80V, V_{GS}=0V$			-1	uA
		$V_{DS}=-80V, V_{GS}=0V$ $T_J=125^\circ C$			-10	
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-600mA$		540	650	mΩ
		$V_{GS}=-4.5V, I_D=-400mA$		590	760	
Gate resistance	R_g	$V_{DS}=0V, V_{GS}=0V$ $f=1MHz$		31		Ω
Forward Transconductance	g_{fs}	$V_{DS}=-10V, I_D=-0.5A$		2		S
Diode Forward Voltage	V_{SD}	$I_S=-1A, V_{GS}=0V$			-1.0	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=-50V, V_{GS}=-10V$ $I_D=-500mA$		4.4	8.8	nC
Gate-Source Charge	Q_{gs}			0.5	1	
Gate-Drain Charge	Q_{gd}			1.8	3.6	
Input Capacitance	C_{iss}	$V_{DS}=-50V, V_{GS}=0V$ $f=1MHz$		382	760	pF
Output Capacitance	C_{oss}			29	60	
Reverse Transfer Capacitance	C_{rss}			18	36	
Turn-On Time	$t_{d(on)}$	$V_{DD}=-50V, I_D=-0.5A,$ $V_{GS}=-10V, R_G=3.3\Omega$		5	10	nS
	t_r			14.5	29	
Turn-Off Time	$t_{d(off)}$			20	40	
	t_f			8	16	



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TYPICAL CHARACTERISTICS

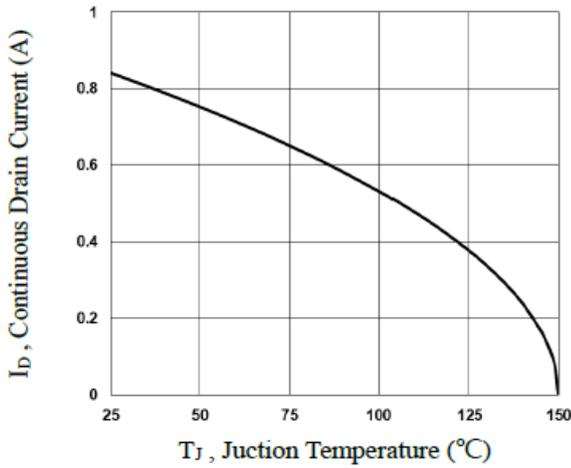


Fig.1 Continuous Drain Current vs. T_J

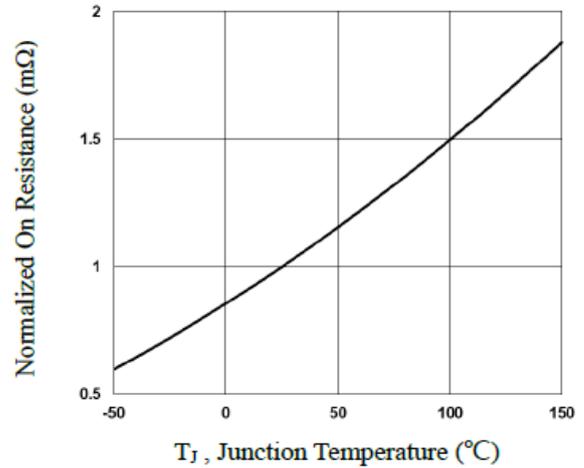


Fig.2 Normalized $R_{DS(on)}$ vs. T_J

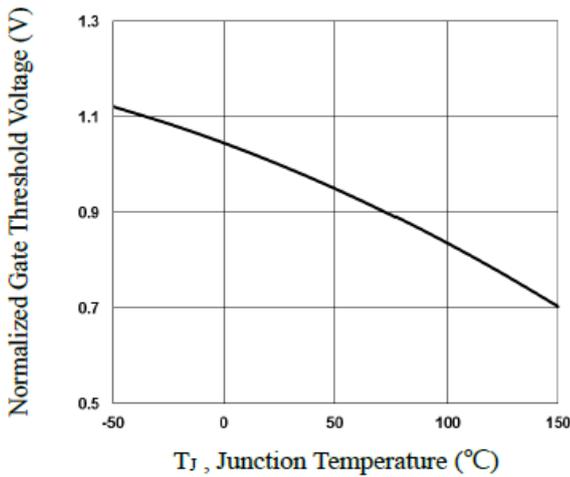


Fig.3 Normalized V_{th} vs. T_J

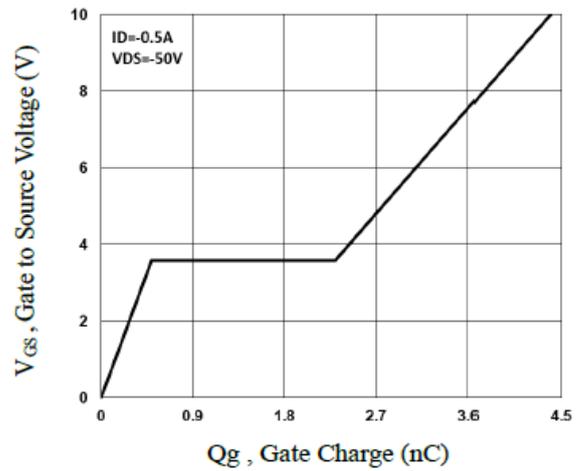


Fig.4 Gate Charge Waveform

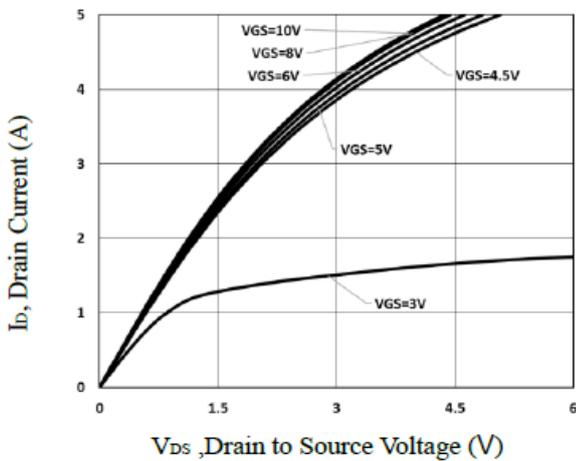


Fig.5 Typical Output Characteristics

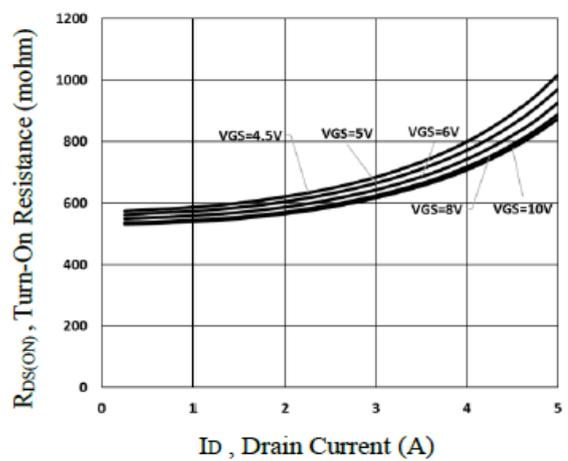


Fig.6 Turn-On Resistance vs. I_D



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TYPICAL CHARACTERISTICS

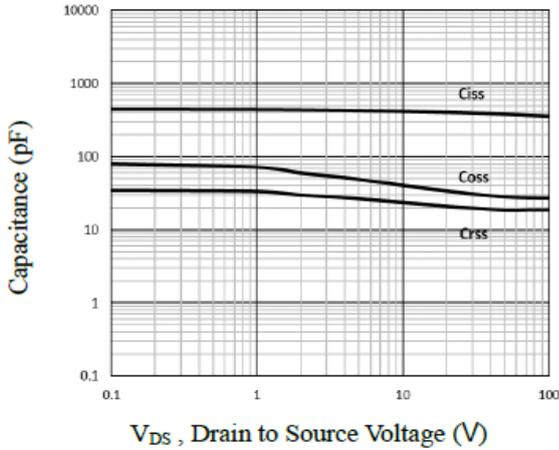


Fig.7 Capacitance Characteristics

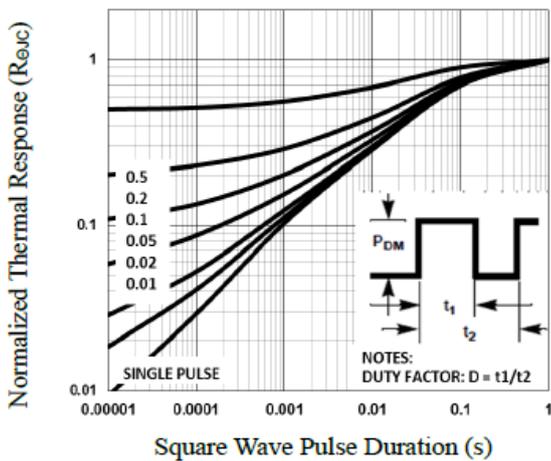


Fig.8 Normalized Transient Response

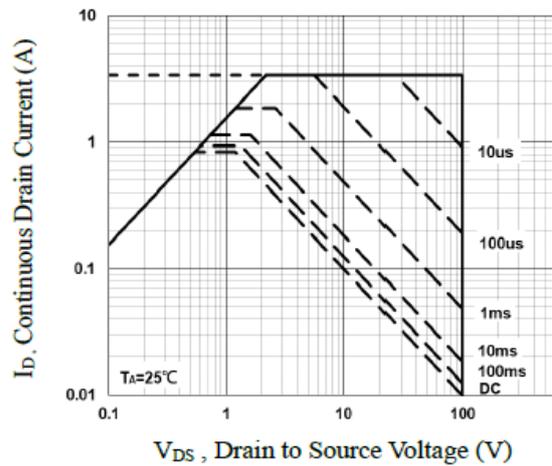


Fig.9 Maximum Safe Operation Area

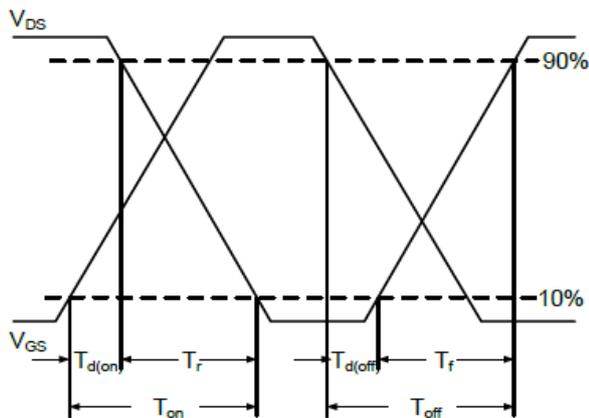


Fig.10 Switching Time Waveform

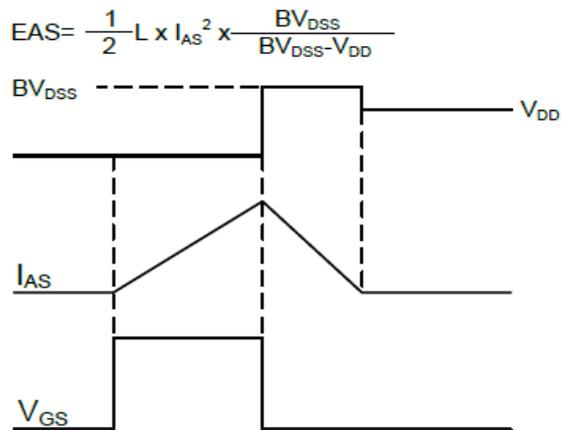


Fig.11 EAS Waveform

$$EAS = \frac{1}{2} L \times I_{AS}^2 \times \frac{BV_{DSS}}{BV_{DSS} - V_{DD}}$$



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