



SPP3457

P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP3457 is the P-Channel logic enhancement mode power field effect transistor which is produced using super high cell density DMOS trench technology. The SPP3457 has been designed specifically to improve the overall efficiency of DC/DC converters using either synchronous or conventional switching PWM controllers. It has been optimized for low gate charge, low $R_{DS(ON)}$ and fast switching speed.

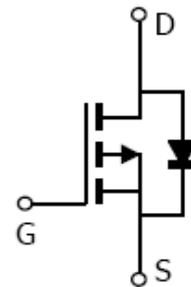
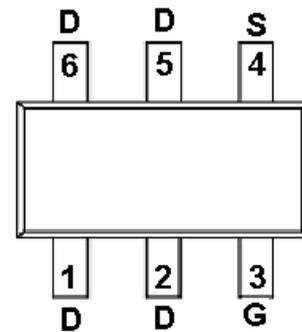
APPLICATIONS

- Powered System
- DC/DC Converter
- Load Switch
- Battery Powered System

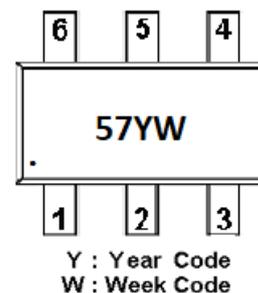
FEATURES

- ◆ -60V/-3.0A, $R_{DS(ON)}=80m\Omega@V_{GS}=-10V$
- ◆ -60V/-2.7A, $R_{DS(ON)}=100m\Omega@V_{GS}=-4.5V$
- ◆ High density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-23-6L package design

PIN CONFIGURATION(SOT-23-6L)



PART MARKING





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PIN DESCRIPTION

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
SPP3457S26RGB	SOT-23-6L	57

※ SPP3457S26RGB : Tape Reel ; Pb – Free ; Halogen – Free

ABSOLUTE MAXIMUM RATINGS (TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit	
Drain-Source Voltage	V _{DSS}	-60	V	
Gate –Source Voltage	V _{GSS}	±20	V	
Continuous Drain Current(T _J =150°C)	I _D	TA=25°C	-3.4	A
		TA=70°C	-2.7	
Pulsed Drain Current	I _{DM}	-14	A	
Power Dissipation	P _D	TA=25°C	1.7	W
		TA=70°C	1.1	
Operating Junction Temperature	T _J	-55/150	°C	
Storage Temperature Range	T _{STG}	-55/150	°C	
Thermal Resistance-Junction to Ambient	R _{θJA}	74	°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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.8		-3	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-48V, V_{GS}=0V, T_J=25^\circ C$			-1	μA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-3A$		65	80	m Ω
		$V_{GS}=-4.5V, I_D=-2.7A$		75	100	
Diode Forward Voltage	V_{SD}	$I_S=-1.3A, V_{GS}=0V$		-0.8	-1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=-30V, V_{GS}=-10V, I_D=-3A$		23		nC
Total Gate Charge	Q_g	$V_{DS}=-30V, V_{GS}=-4.5V, I_D=-3A$		11.4		
Gate-Source Charge	Q_{gs}			4.8		
Gate-Drain Charge	Q_{gd}			4.6		
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		958		pF
Output Capacitance	C_{oss}			106		
Reverse Transfer Capacitance	C_{rss}			35		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-30V, R_L=30\Omega, V_{GS}=-10V, R_G=6\Omega$		28		nS
	t_r			8		
Turn-Off Time	$t_{d(off)}$			62		
	t_f			9		

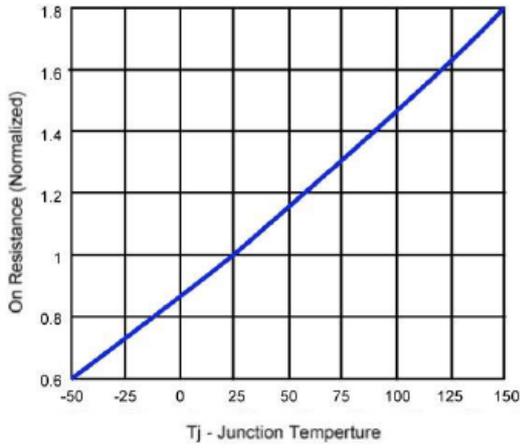


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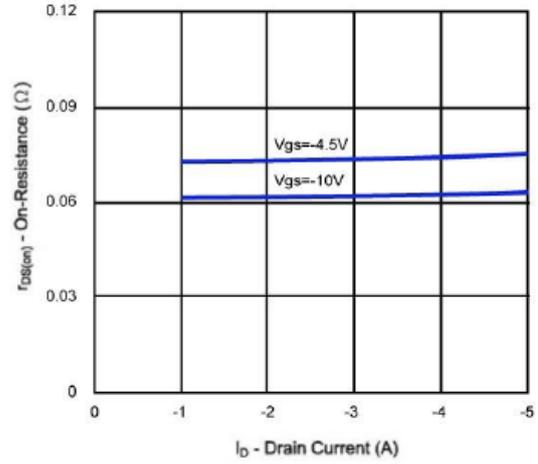
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TYPICAL CHARACTERISTICS

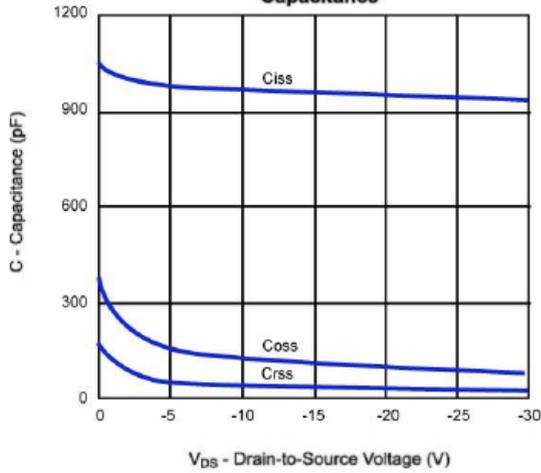
On Resistance vs. Junction Temperature



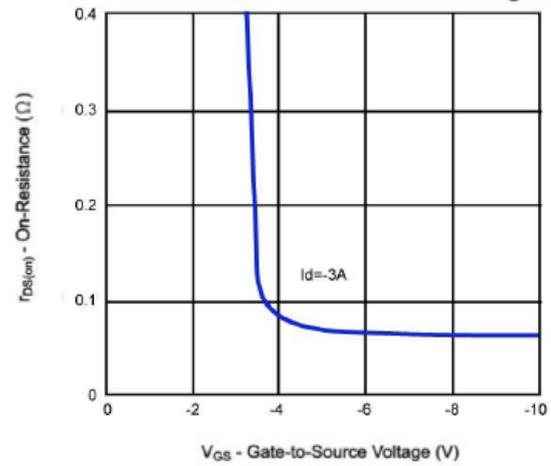
On-Resistance vs. Drain Current



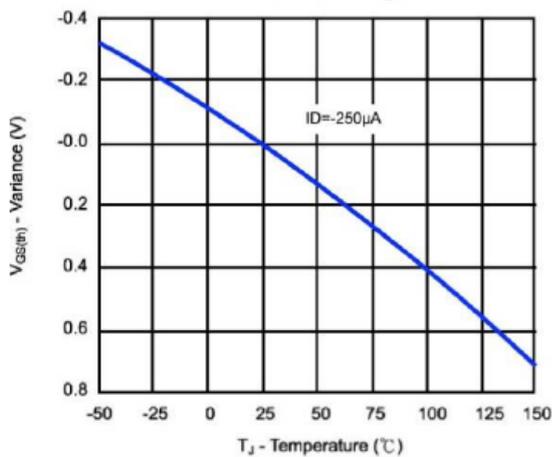
Capacitance



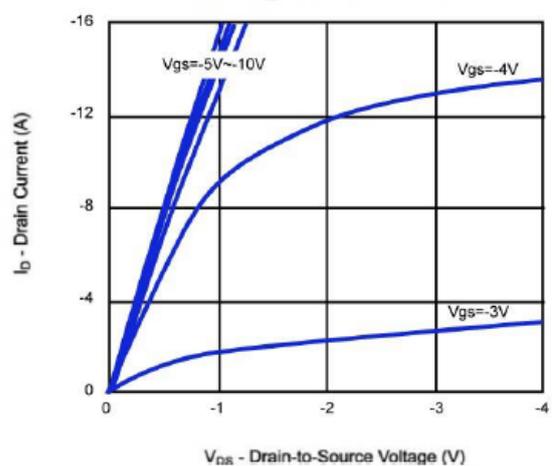
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



On-Region Characteristics

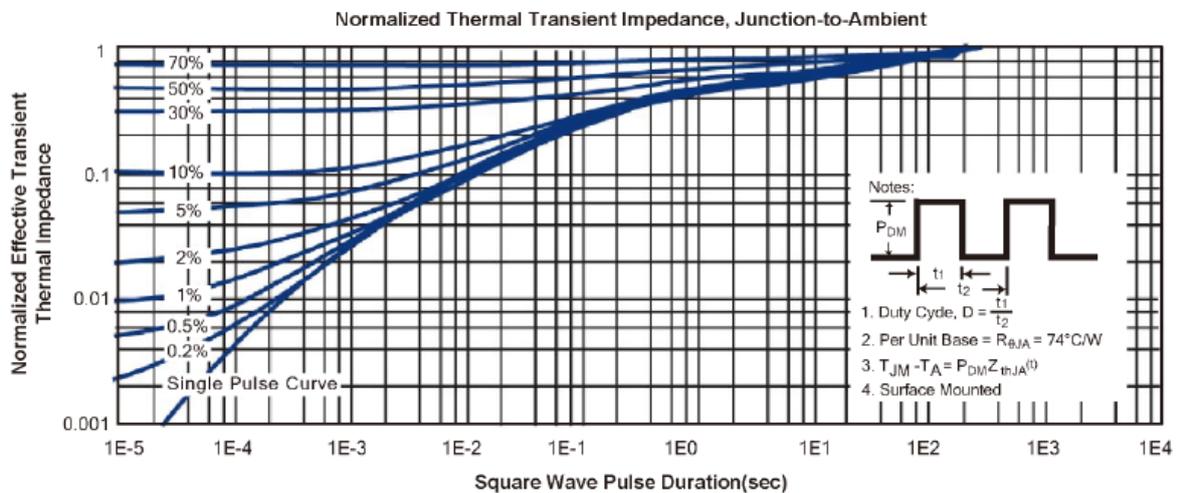
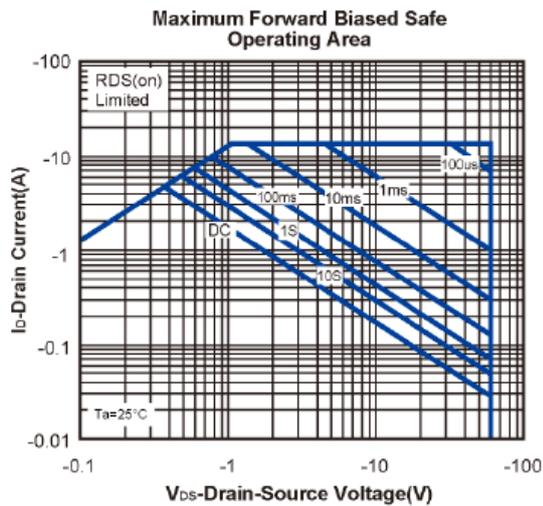
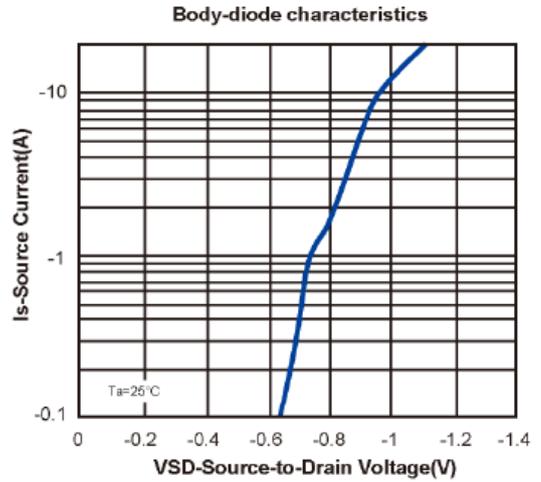
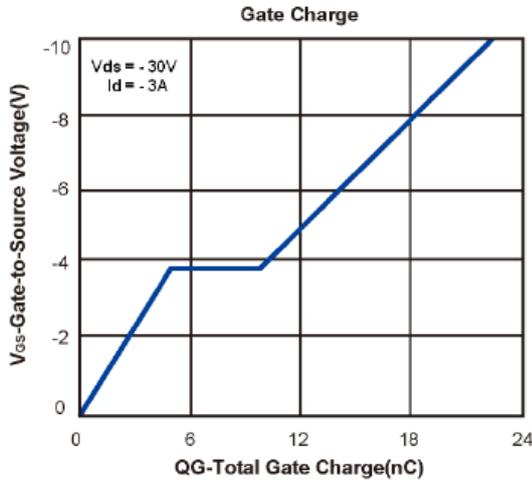




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TYPICAL CHARACTERISTICS





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SYNC Power Corporation

7F-2, No.3-1, Park Street

NanKang District (NKSP), Taipei, Taiwan, 115, R.O.C

Phone: 886-2-2655-8178

Fax: 886-2-2655-8468

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