PAN3018S

Dual N-Ch 30V Fast Switching MOSFET

V_{DS}=30V, I_D=4.5A, $R_{DS(ON)}$=50mΩ

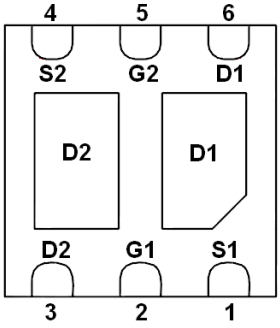
➢ General Description

This PAN3018S Dual N-Channel enhancement mode power field effect transistor is the high density trench technology and this advanced technology can provide excellent Rds(On) performance and efficiency for power switching and load switching application., this device also comply with the RoHS and Green Product requirement with full function reliability approved.

➢ Feature

- ●Super high density cell design for extremely low RDS (ON)
- ●Exceptional on-resistance and maximum DC current capability
- ●DFN2X2-6L package design

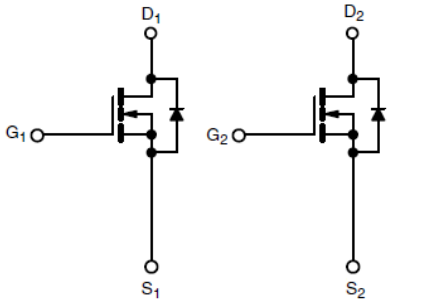
➢ DFN2X2-6L



BOTTOM VIEW

➢ Application

- ●Load Switch with Low Voltage Drop
- ●Load Switch for 1.2 V/1.5 V/1.8 V Power Lines
- ●Smart Phones, Tablet PCs, Portable Media Players



N-Channel MOSFET N-Channel MOSFET

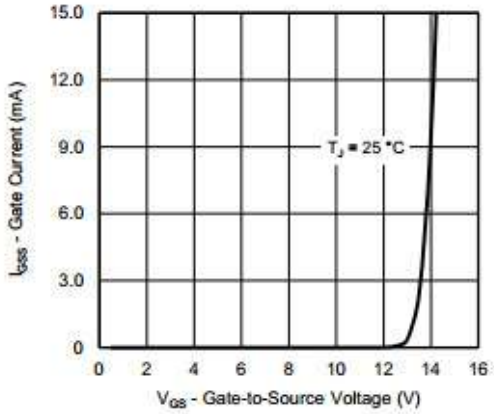
➢ Absolute Maximum Ratings

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate –Source Voltage		V_{GSS}	±12	V
Continuous Drain Current(T_J=150℃)	T_C=25℃	I_D	4.5	A
	T_C=70℃		4.5	
	T_A=25℃		4.4	
	T_A=70℃		3.5	
Pulsed Drain Current		I_{DM}	15	A
Continuous Source Current(Diode Conduction)		I_S	1.6	A
Power Dissipation	T_C=25℃	P_D	7.8	W
	T_C=70℃		5.0	
Operating Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	52	℃/W
Thermal Resistance-Junction to Case(Drian)		$R_{\theta Jc}$	12.5	

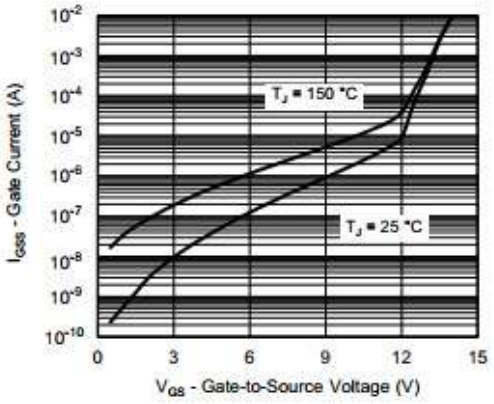
➢ Electrical Characteristics (T_A=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	0.6		1.0	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±12V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=24V,V_{GS}=0V			1	uA
		V_{DS}=24V,V_{GS}=0V T_J=85°C			30	
On-State Drain Current	$I_{D(on)}$	V_{DS}≧5V,V_{GS}=4.5V	30			A
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V ,I_D=4.0A		36	50	mΩ
		V_{GS}=4.5V,I_D=3.0A		40	56	
		V_{GS}=2.5V,I_D=2.5A		49	64	
		V_{GS}=1.8V,I_D=1.0A		61	76	
Forward Transconductance	g_{FS}	V_{DS}=15V,I_D=3.0A		15		S
Diode Forward Voltage	V_{SD}	I_S=2.0A,V_{GS}=0V		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=15V,V_{GS}=4.5V I_D≡10A		3.6	5.5	nC
Gate-Source Charge	Q_{gs}			0.5		
Gate-Drain Charge	Q_{gd}			0.5		
Input Capacitance	C_{iss}	V_{DS}=15V,V_{GS}=0V f=1MHz		320		pF
Output Capacitance	C_{oss}			45		
Reverse Transfer Capacitance	C_{rss}			20		
Turn-On Time	$t_{d(on)}$	V_{DD}=15V,R_L=5Ω I_D≡3.0A,V_{GEN}=4.5V R_G=1Ω		5	10	ns
	t_r			30	60	
Turn-Off Time	$t_{d(off)}$			30	60	
	t_f			40	80	

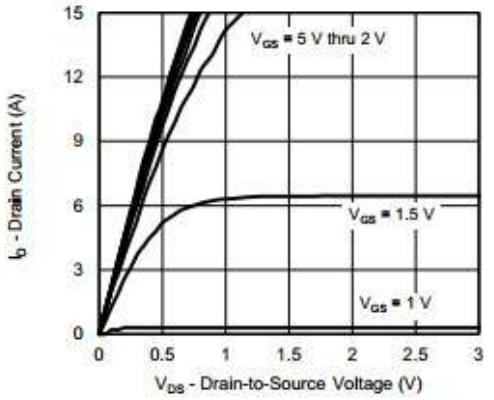
➢ Typical Characteristics



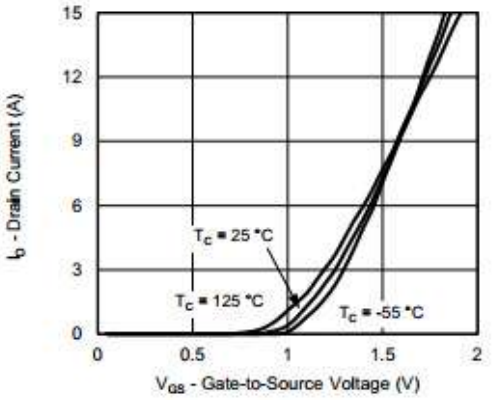
Gate Current vs. Gate-Source Voltage



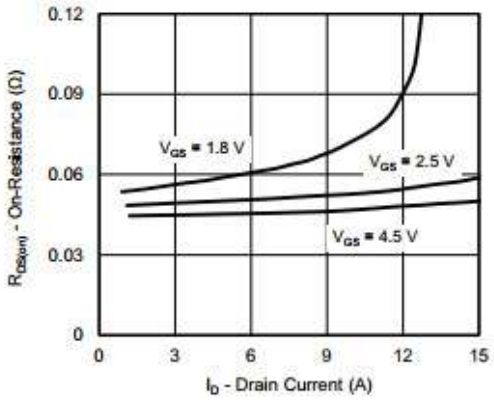
Gate Current vs. Gate-Source Voltage



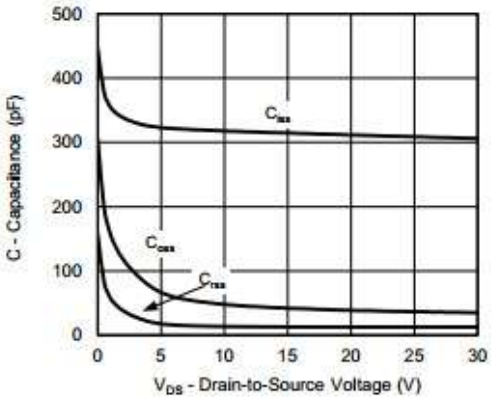
Output Characteristics



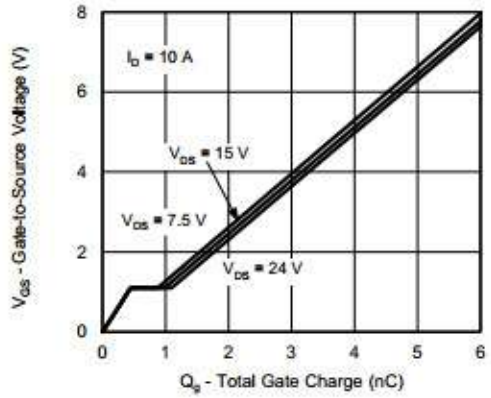
Transfer Characteristics



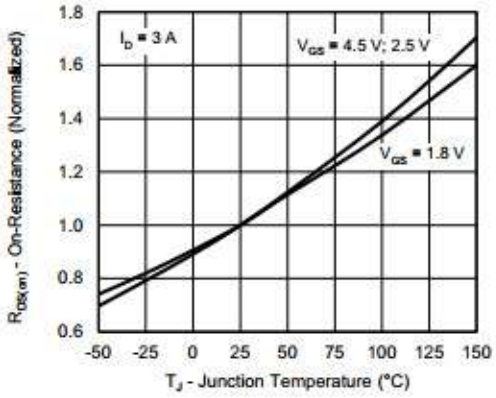
On-Resistance vs. Drain Current and Gate Voltage



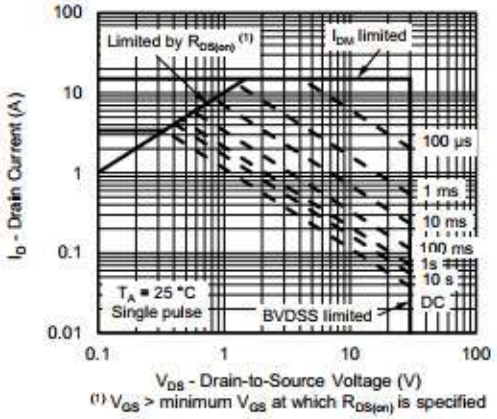
Capacitance



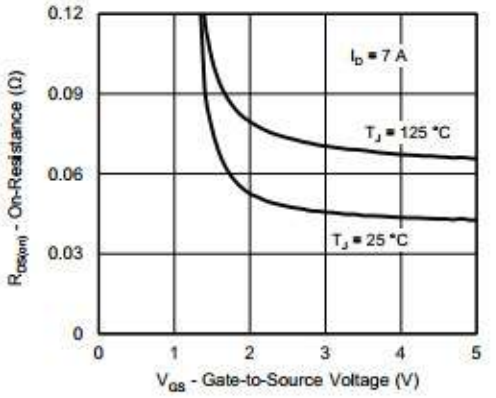
Gate Charge



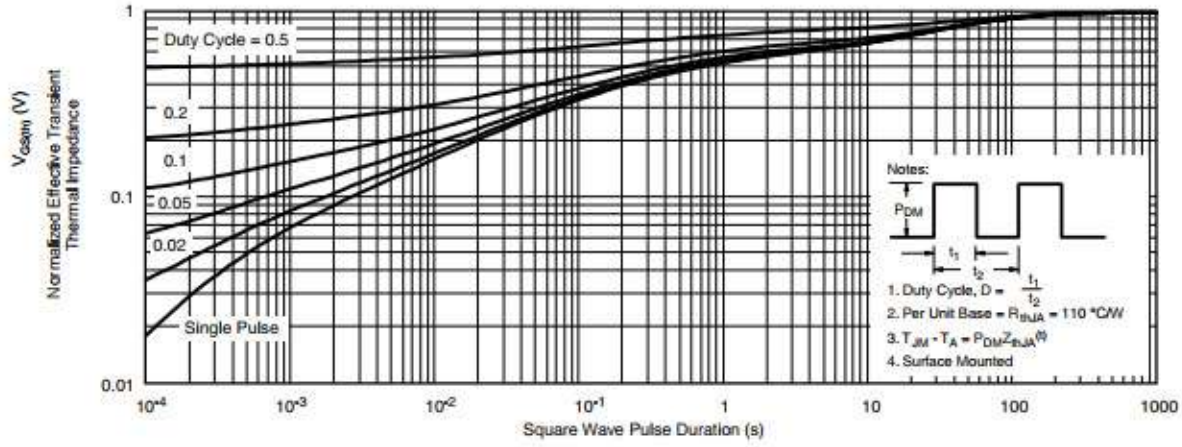
On-Resistance vs. Junction Temperature



Safe Operating Area, Junction-to-Ambient

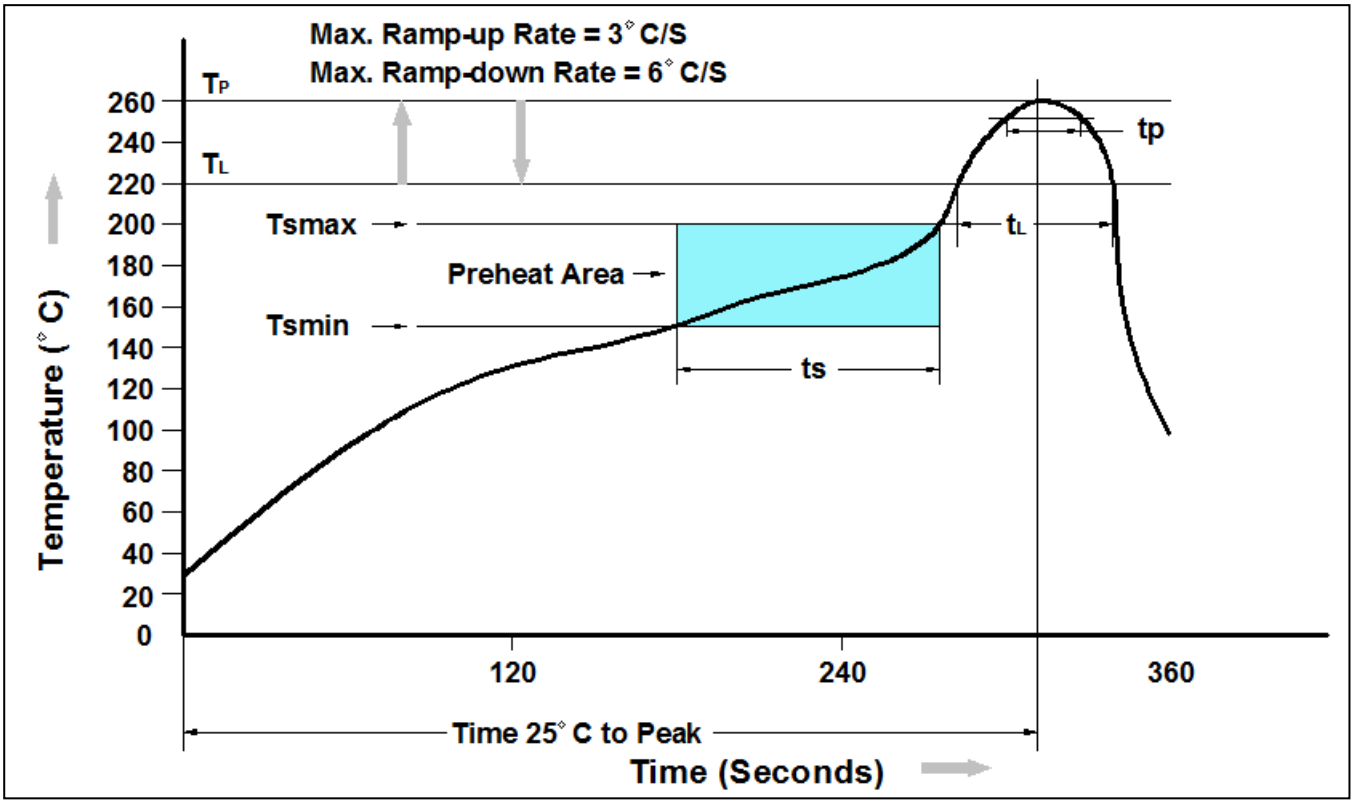


On-Resistance vs. Gate-to-Source Voltage



Normalized Thermal Transient Impedance, Junction-to-Ambient

➢ Recommand IR Reflow Soldering Thermal Profile

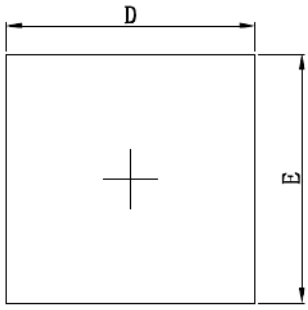


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Average Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (tP) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

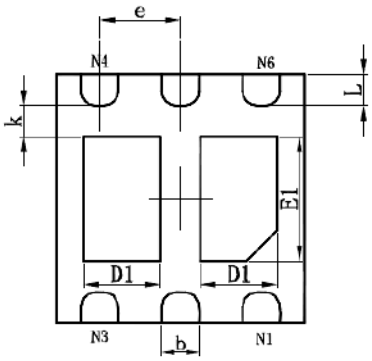
➢ Ordering Information

Part Number	Description	Quantity
PAN3018S	DFN2X2-6L Reel	4000 pcs

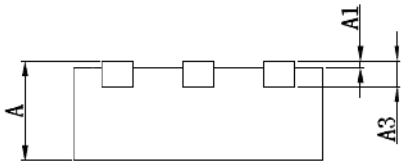
➢ Package Information (DFN2X2-6L)



Top View



Bottom View



Side View

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700/0.800	0.800/0.900	0.028/0.031	0.031/0.035
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.924	2.076	0.076	0.082
E	1.924	2.076	0.076	0.082
D1	0.520	0.720	0.020	0.028
E1	0.900	1.100	0.035	0.043
k	0.200MIN.		0.008MIN.	
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
L	0.174	0.326	0.007	0.013

DISCLAIMER

- The information in this document and any product described herein are subject to change without notice and should not be construed as a commitment by Paceleader, Paceleader reserve the right to make changes to the information in this document.

- Though Paceleader make effort to improve product quality and reliability, Product can malfunction and fail due to their inherent electrical sensitivity and vulnerability to physical stress, it is the responsibility of the customer, when utilizing Paceleader products, to comply with the standards of safety in making a safe design for entire system and to avoid situation in which a malfunction or failure., In developing a new designs, customer should ensure that the device which shown in this documents are used within specified operating ranges.

- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by Paceleader for any infringements of patents or other rights of the third parties which may result from its use.