

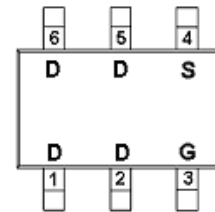
➤ General Description

This PAP0235WM P-Channel enhancement mode power field effect transistor is the high density trench technology and this advanced technology can provide excellent R_{ds(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

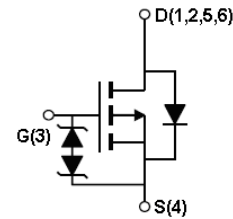
- Super high density cell design for extremely low R_{DS} (ON)
- Exceptional on-resistance and maximum DC current capability
- ESD Protection Diode design-in
- SOT-23-6L package design

➤ SOT-23-6L



➤ Application

- Active Clamp Circuits in DC/DC Power Supplies



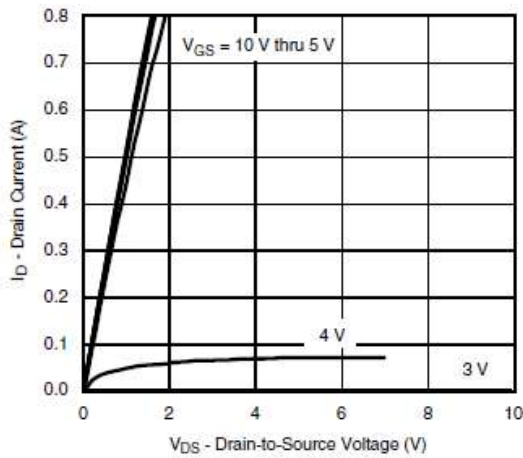
➤ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V _{DSS}	-150	V
Gate –Source Voltage	V _{GSS}	±20	V
Continuous Drain Current(T _J =150°C)	I _D	T _c =25°C	-1.0
		T _c =70°C	-0.6
Pulsed Drain Current	I _{DM}	-1.6	A
Continuous Source Current(Diode Conduction)	I _S	-1.6	A
Power Dissipation	P _D	T _C =25°C	3.2
		T _C =70°C	2.1
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

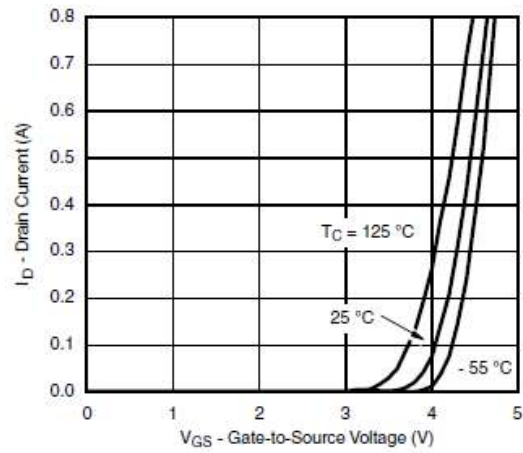
➤ **Electrical Characteristics ($T_A=25^\circ C$ Unless otherwise noted)**

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-200			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0		-2.5	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-160V, V_{GS}=0V$			-1	μA
		$V_{DS}=-160V, V_{GS}=0V$ $T_J=85^\circ C$			-30	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq -10V, V_{GS}=-10V$	-0.6			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-1.0A$		2000	2400	$m\Omega$
		$V_{GS}=-4.5V, I_D=-0.6A$		2100	2600	
Forward Transconductance	g_{FS}	$V_{DS}=-10V, I_D=-0.5A$		1.5		S
Diode Forward Voltage	V_{SD}	$I_S=-0.3A, V_{GS}=0V$		-0.75	-1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=-75V, V_{GS}=-10V$ $I_D \equiv -0.5A$		4.2	8	nC
Gate-Source Charge	Q_{gs}			0.98		
Gate-Drain Charge	Q_{gd}			1.32		
Input Capacitance	C_{iss}	$V_{DS}=-75V, V_{GS}=0V$ $f=1MHz$		155		pF
Output Capacitance	C_{oss}			8		
Reverse Transfer Capacitance	C_{rss}			6		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-75V, R_L=75\Omega$ $I_D \equiv -1.0A, V_{GEN}=-10V$ $R_G=1.0\Omega$		5	10	ns
	t_r			10	20	
Turn-Off Time	$t_{d(off)}$			20	40	
	t_f			10	20	

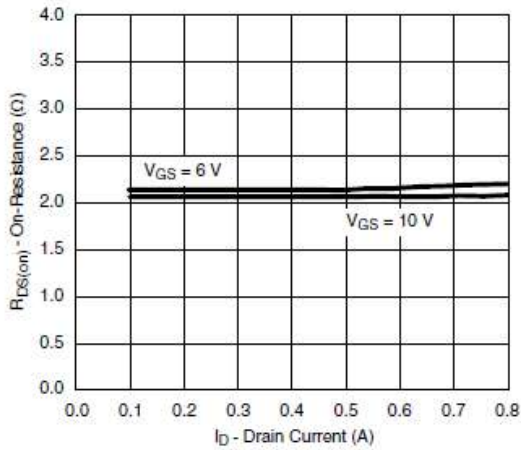
➤ Typical Characteristics



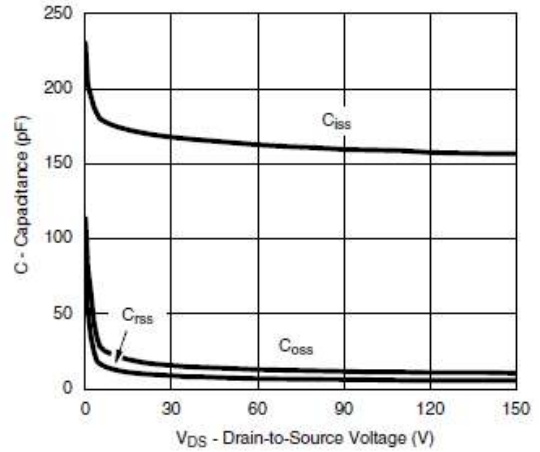
Output Characteristics



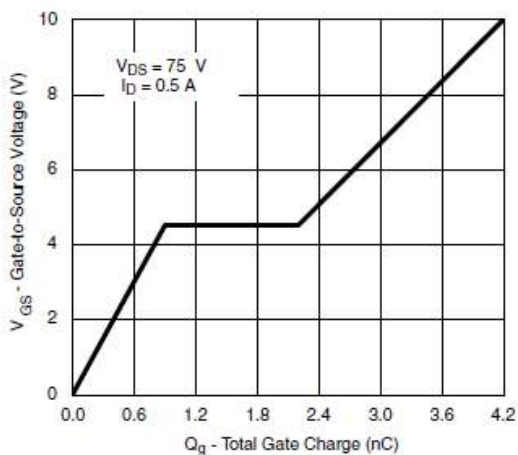
Transfer Characteristics



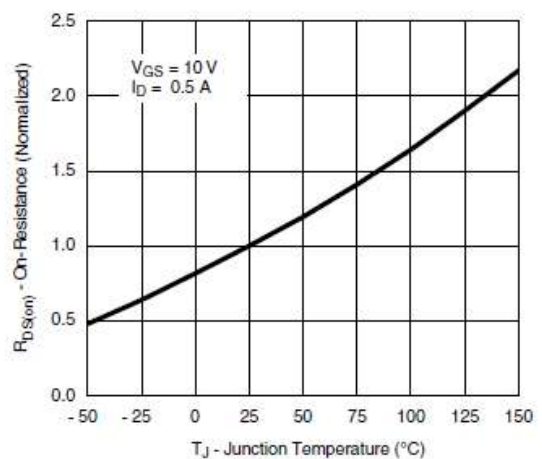
On-Resistance vs. Drain Current and Gate Voltage



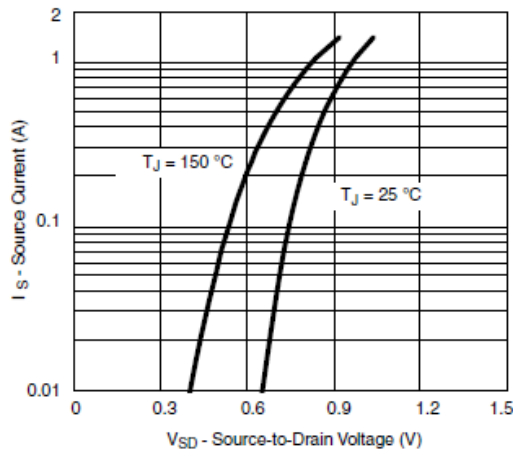
Capacitance



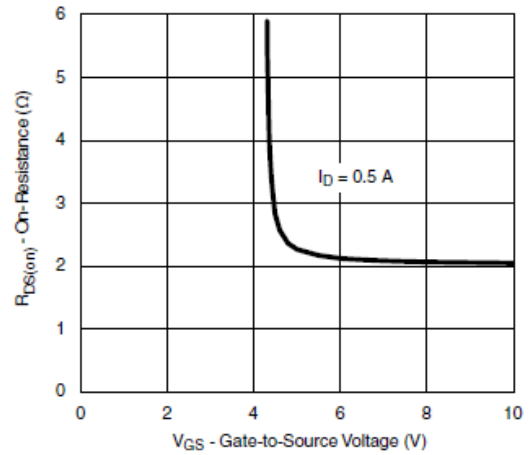
Gate Charge



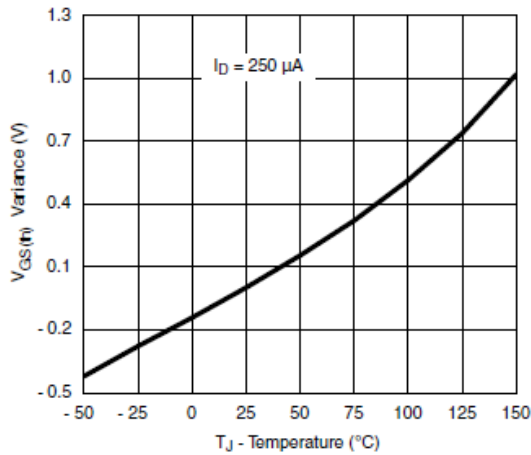
On-Resistance vs. Junction Temperature



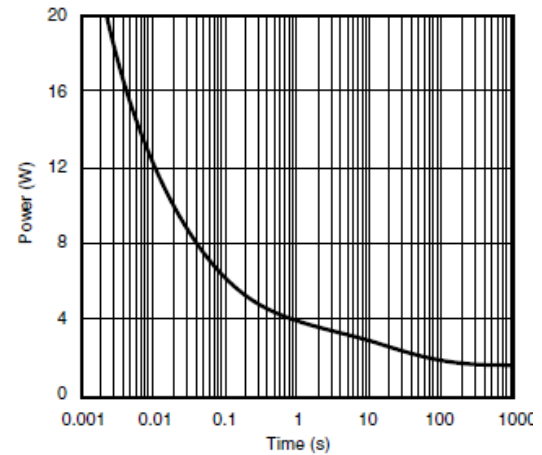
Source-Drain Diode Forward Voltage



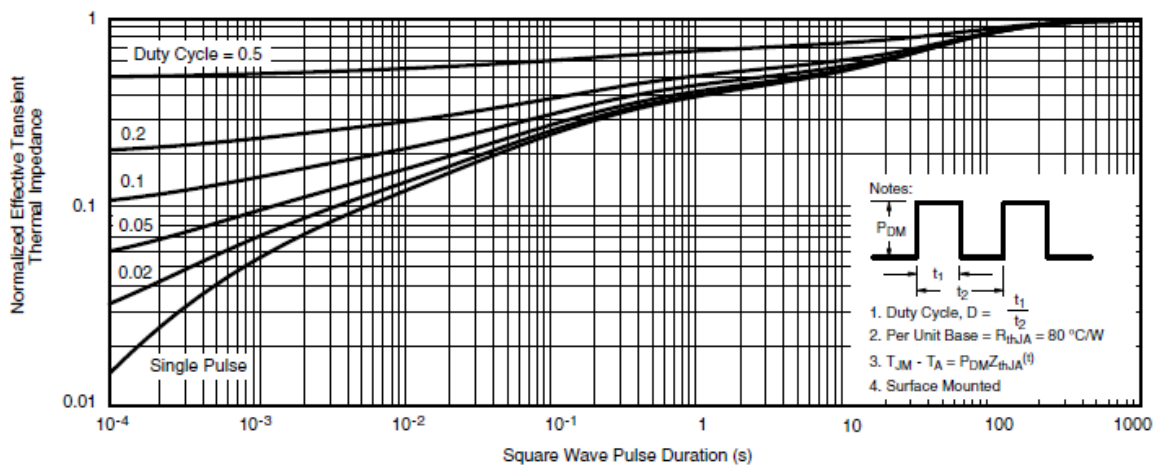
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage

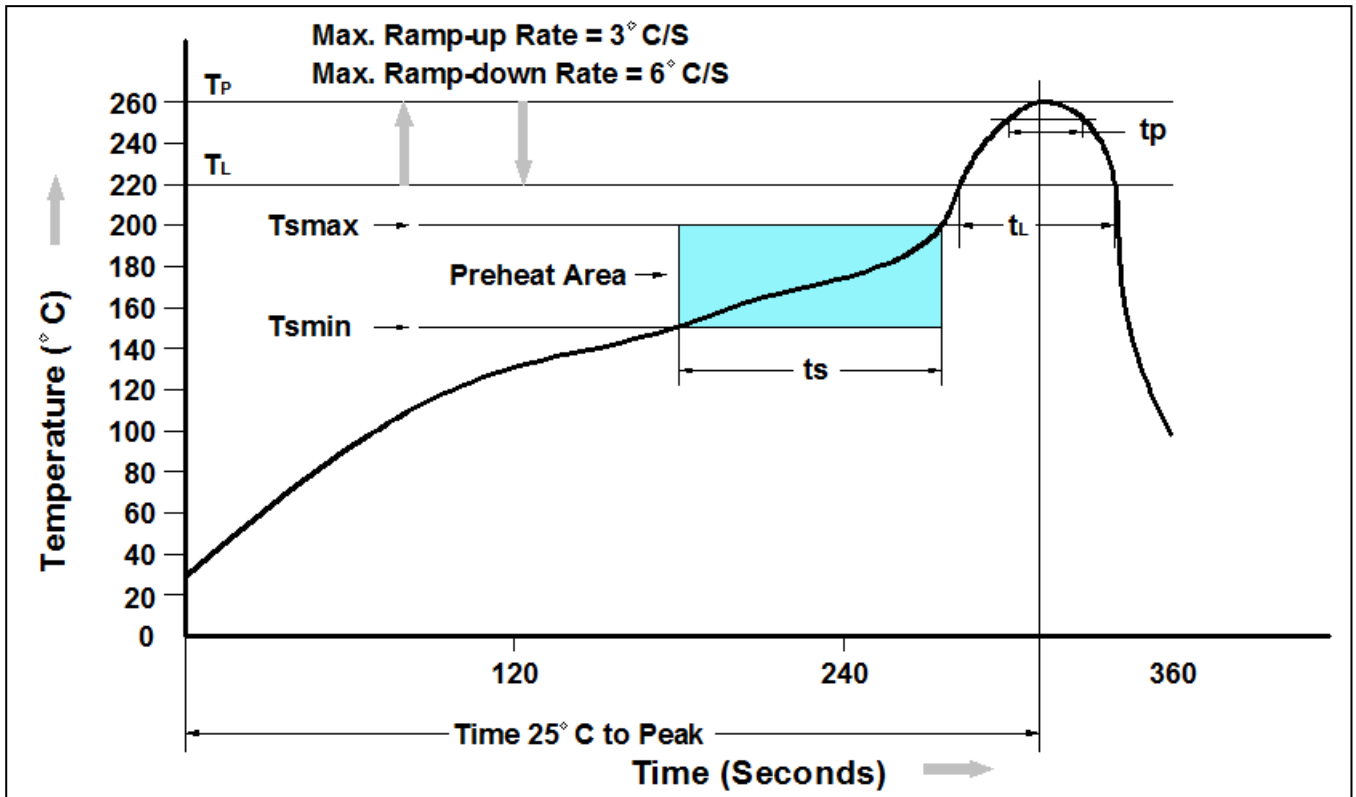


Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Ambient

➤ Recommand IR Reflow Soldering Thermal Profile

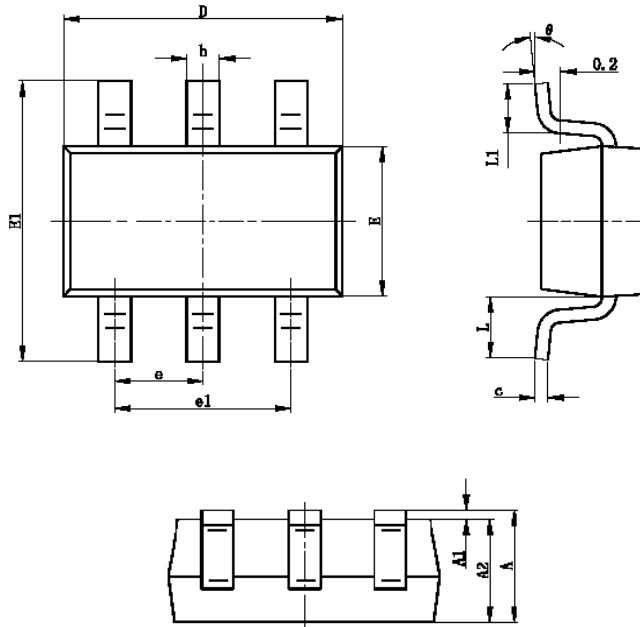


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	150°C
Temperature Max. (T _{smax})	200°C
Time (t _s) from (T _{smin} to T _{smax})	60-120 seconds
Average Ramp-up Rate (t _L to t _P)	3°C/second max.
Liquidous Temperature (T _L)	217°C
Time (t _L) Maintained Above (T _L)	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (t _P) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (T _P to T _L)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

➤ Ordering Information

Part Number	Description	Quantity
PAP0235WM	SOT-23-6L	3000 pcs

➤ Package Information (SOT-23-6L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.400	0.012	0.016
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.700REF		0.028REF	
L1	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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.