

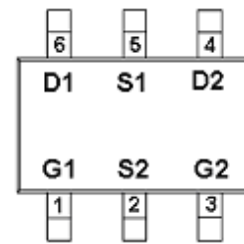
➤ General Description

This PAC0010WM N&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

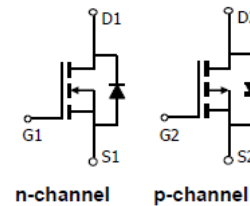
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23-6L package design

➤ SOT-23-6L



➤ Application

- LED Backlight
- DC/DC Converter
- Load Switch for Portable Applications



➤ Absolute Maximum Ratings

Parameter	Symbol	Rating		Unit	
		N-Channel	P-Channel		
Drain-Source Voltage	V_{DSS}	100	-100	V	
Gate –Source Voltage	V_{GSS}	± 20	± 20	V	
Continuous Drain Current($T_J=150^\circ C$)	I_D	$T_A=25^\circ C$	2.3	-1.0	A
		$T_A=70^\circ C$	1.8	-0.5	
Pulsed Drain Current	I_{DM}	4	-4	A	
Continuous Source Current(Diode Conduction)	I_S	1.5	-1.5	A	
Power Dissipation	P_D	$T_A=25^\circ C$	2.0		W
		$T_A=70^\circ C$	1.3		
Operating Junction Temperature	T_J	150		$^\circ C$	
Storage Temperature Range	T_{STG}	-55/150		$^\circ C$	
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	120		$^\circ C/W$	

N-Ch and P-Ch Fast Switching MOSFET

$V_{DS}=100V, I_D=2.3A, R_{DS(on)}=310m\Omega$

$V_{DS}=-100V, I_D=-1.0A, R_{DS(on)}=650m\Omega$

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

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		2.0	
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
		$V_{DS}=80V, V_{GS}=0V$ $T_J=85^\circ C$			10	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 5V, V_{GS}=4.5V$	5			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=2.3A$			310	m Ω
		$V_{GS}=4.5V, I_D=1.8A$			320	
Forward Transconductance	g_{FS}	$V_{DS}=20V, I_D=1.5A$		2		S
Diode Forward Voltage	V_{SD}	$I_S=1.3A, V_{GS}=0V$		0.85	1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=50V, V_{GS}=4.5V$ $I_D \equiv 1.6A$		2.8	5.8	nC
Gate-Source Charge	Q_{gs}			0.75		
Gate-Drain Charge	Q_{gd}			1.4		
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V$ $f=1MHz$		200		pF
Output Capacitance	C_{oss}			22		
Reverse Transfer Capacitance	C_{rss}			13		
Turn-On Time	$t_{d(on)}$	$V_{DD}=50V, R_L=39\Omega$ $I_D \equiv 1.3A, V_{GEN}=4.5V$		25	50	ns
	t_r			20	50	
Turn-Off Time	$t_{d(off)}$	$R_G=1\Omega$		15	30	
	t_f			10	25	

N-Ch and P-Ch Fast Switching MOSFET

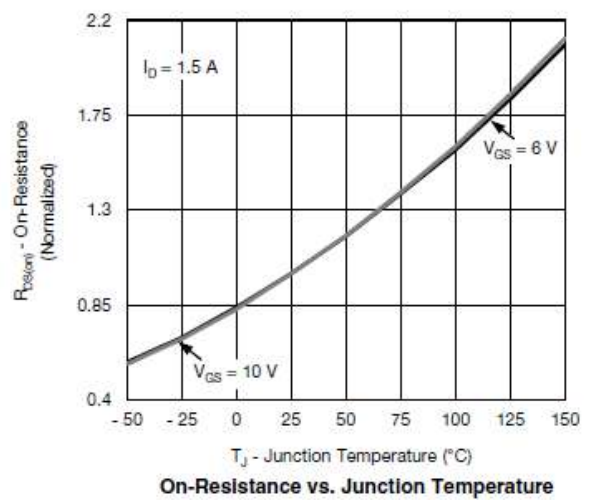
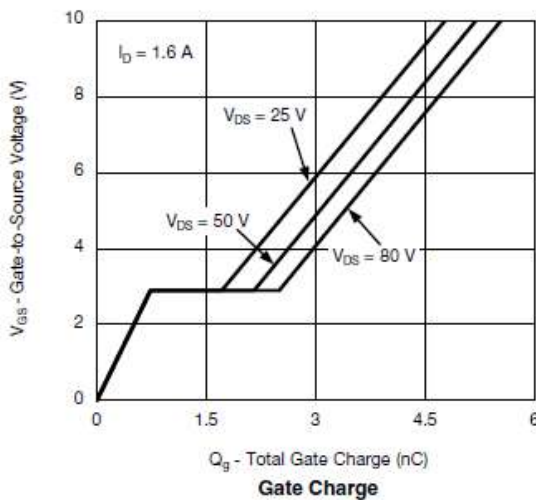
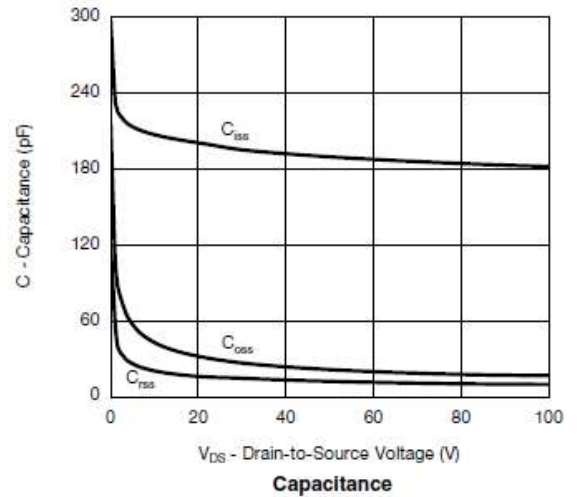
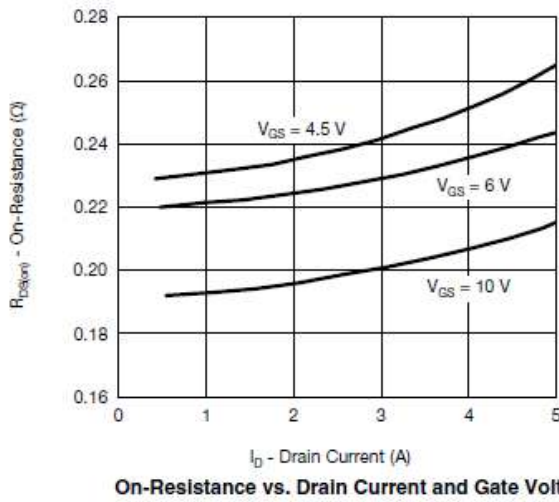
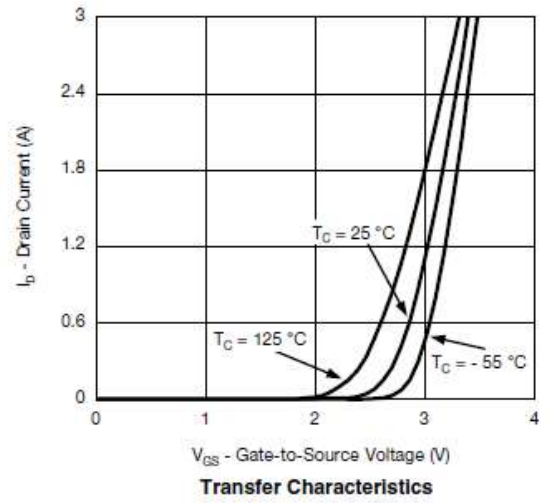
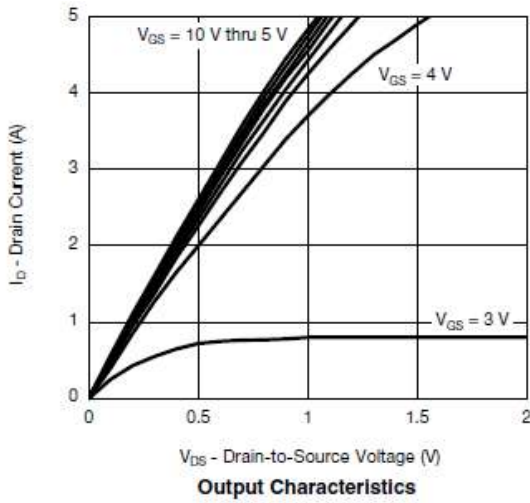
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$V_{DS}=-100V, I_D=-1.0A, R_{DS(on)}=650m\Omega$

➤ **P-Channel Electrical Characteristics (T_A=25°C Unless otherwise noted)**

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0		-2.5	V
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-80V, V_{GS}=0V$			-1	uA
		$V_{DS}=-80V, V_{GS}=0V$ $T_J=85^\circ C$			-30	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \leq -15V, V_{GS}=-10V$	-1.6			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-1.0A$		600	650	mΩ
		$V_{GS}=-4.5V, I_D=-0.5A$		620	700	
Forward Transconductance	g_{FS}	$V_{DS}=-15V, I_D=-0.5A$		2.8		S
Diode Forward Voltage	V_{SD}	$I_S=-0.5A, V_{GS}=0V$		-0.75	-1.3	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=-75V, V_{GS}=-10V$ $I_D=-0.5A$		9	20	nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			3.5		
Input Capacitance	C_{iss}	$V_{DS}=-25V, V_{GS}=0V$ $f=1MHz$		450	650	pF
Output Capacitance	C_{oss}			50		
Reverse Transfer Capacitance	C_{rss}			30		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-75V, R_L=75\Omega$ $I_D=-1.0A, V_{GEN}=-10V$		10	20	ns
	t_r			15	30	
Turn-Off Time	$t_{d(off)}$	$R_G=6.0\Omega$		20	40	
	t_f			15	30	

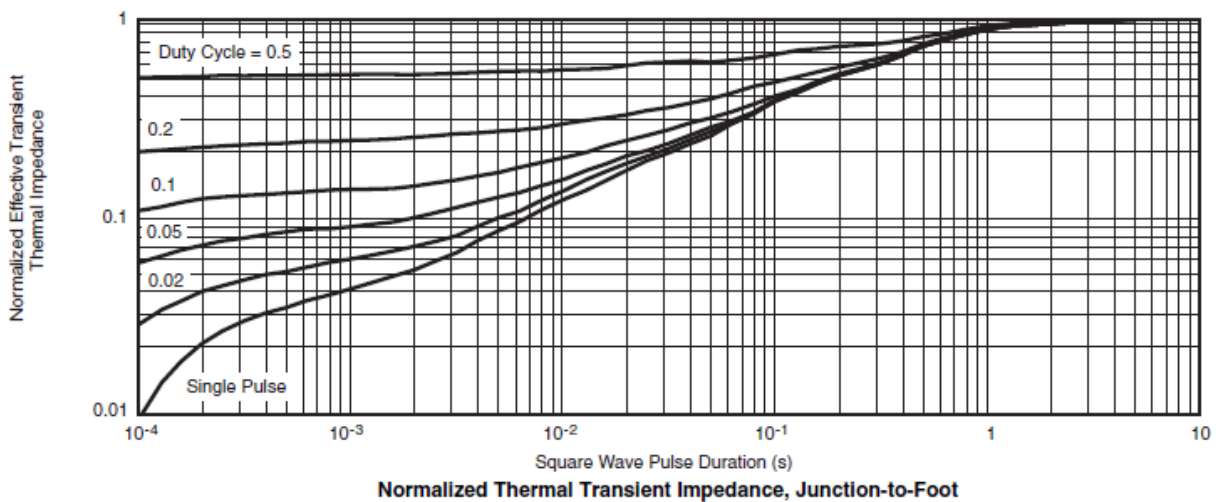
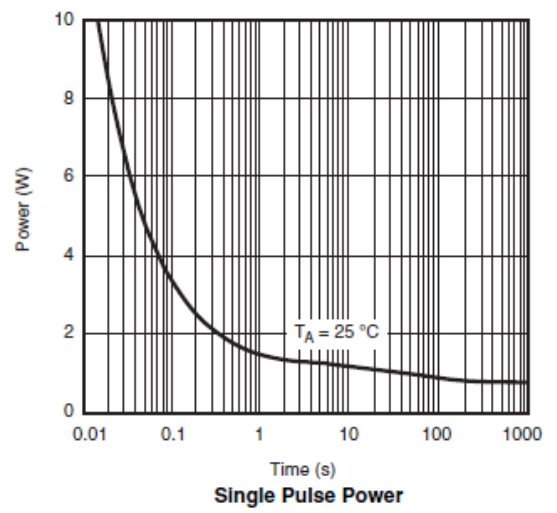
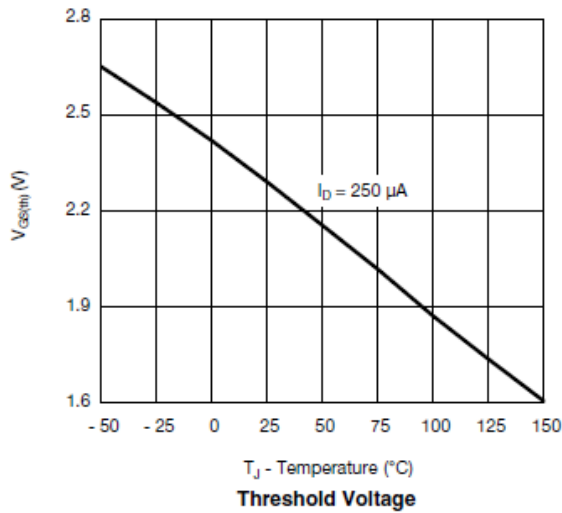
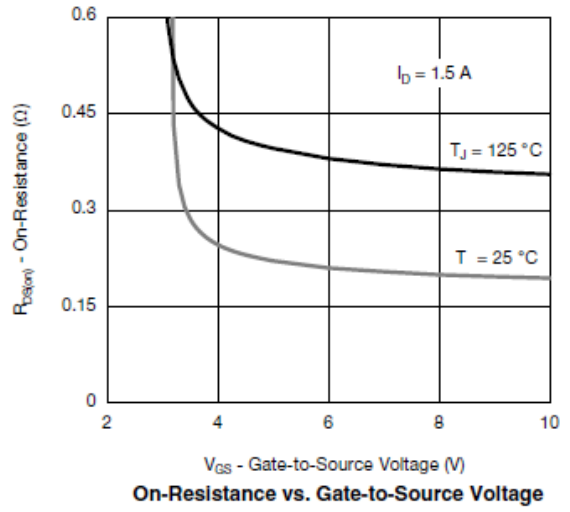
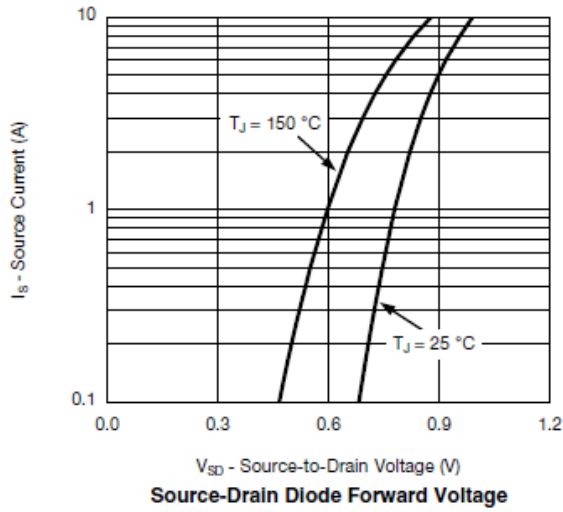
➤ N-Channel Typical Characteristics



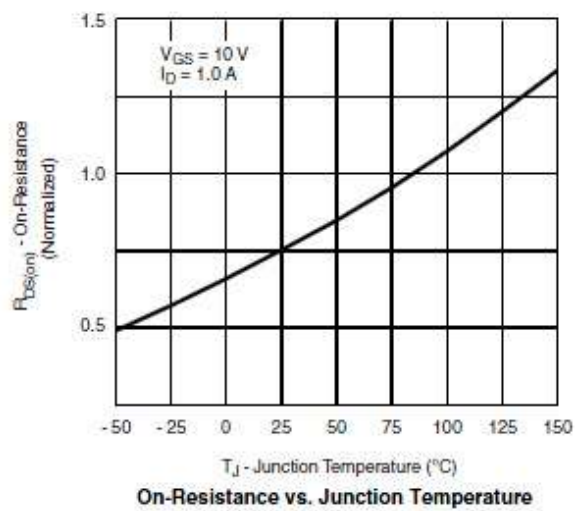
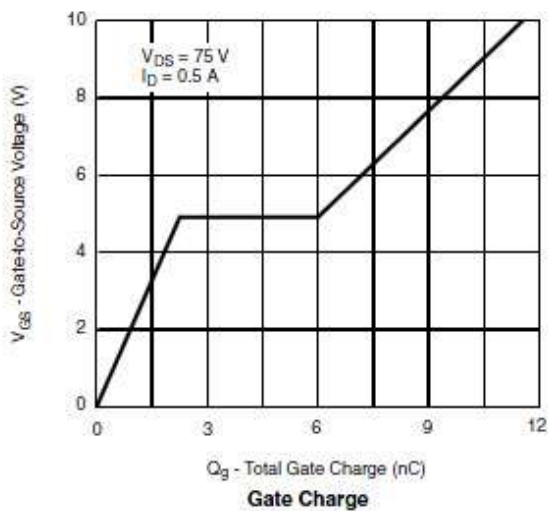
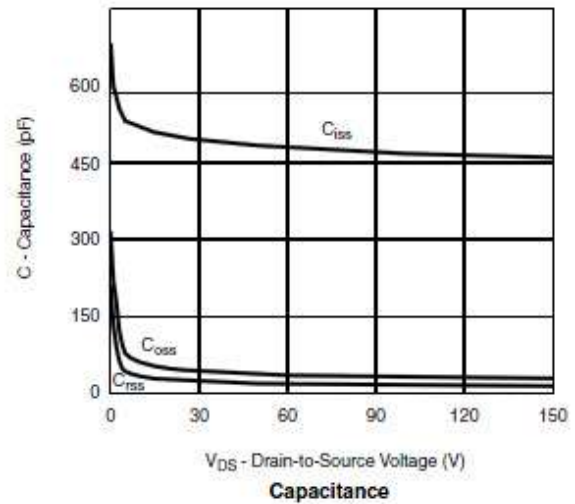
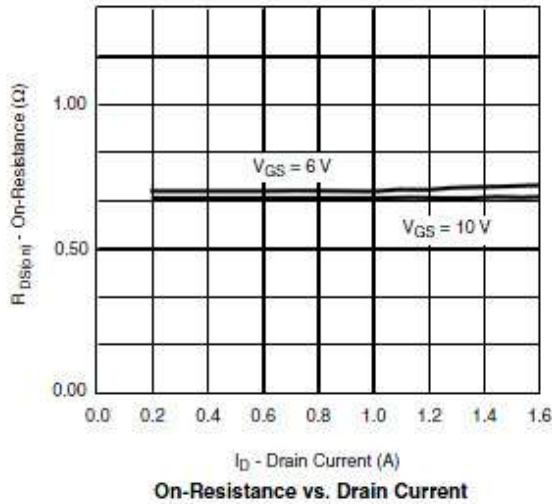
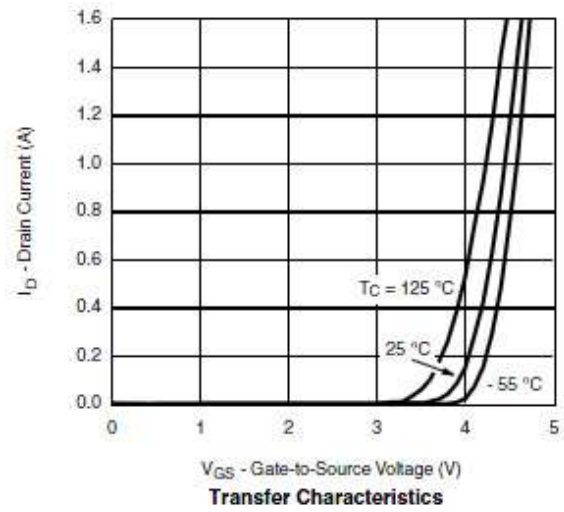
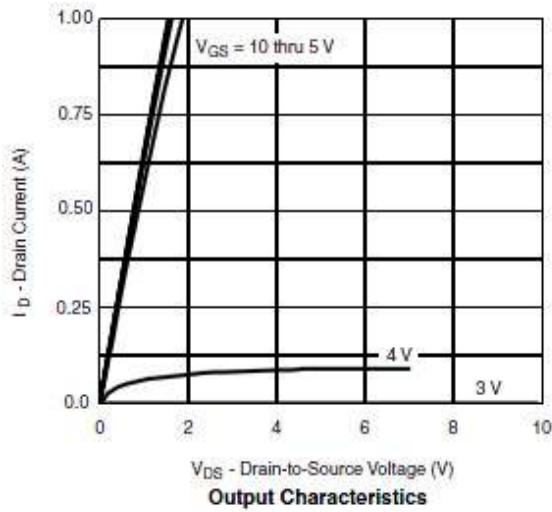
N-Ch and P-Ch Fast Switching MOSFET

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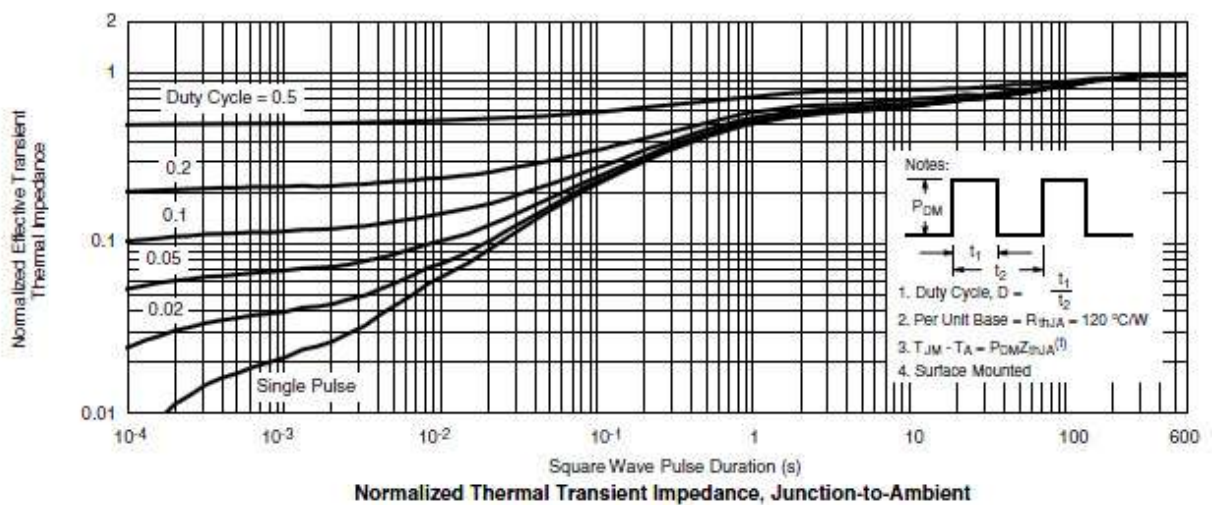
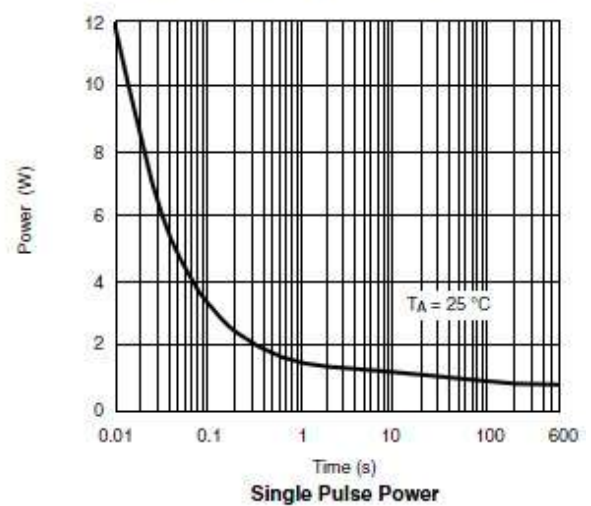
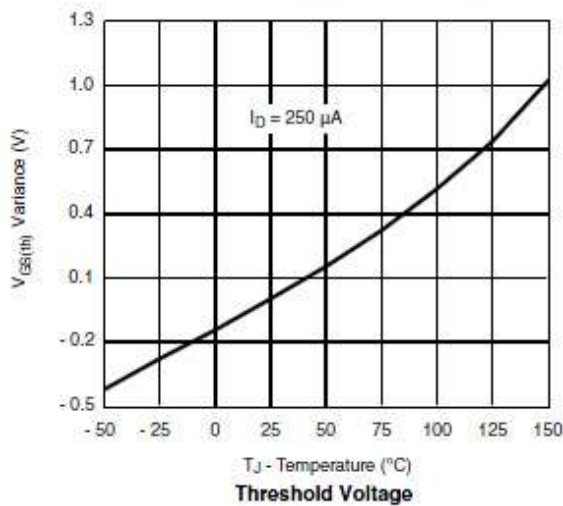
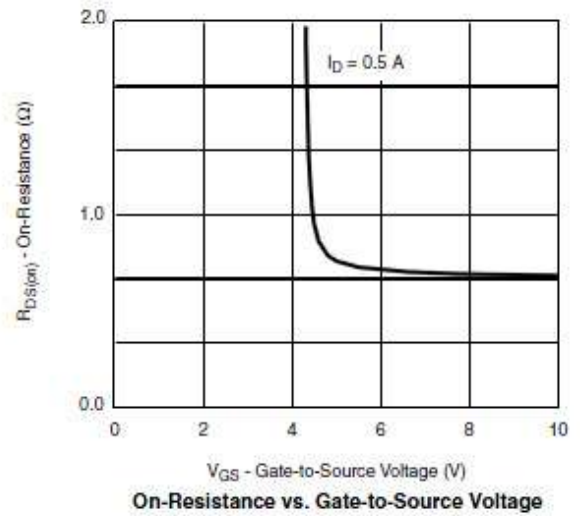
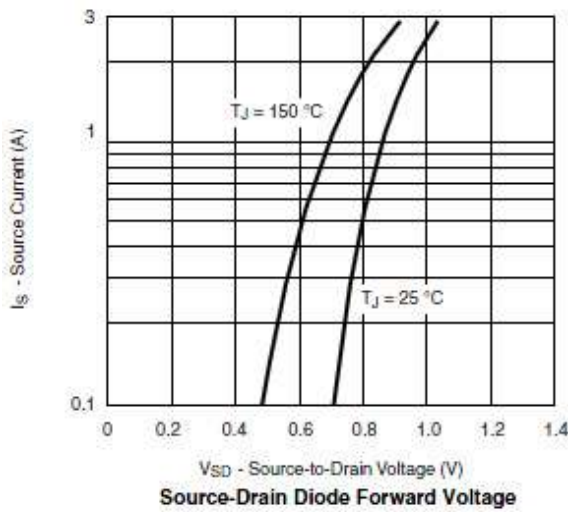
➤ P-Channel Typical Characteristics



N-Ch and P-Ch Fast Switching MOSFET

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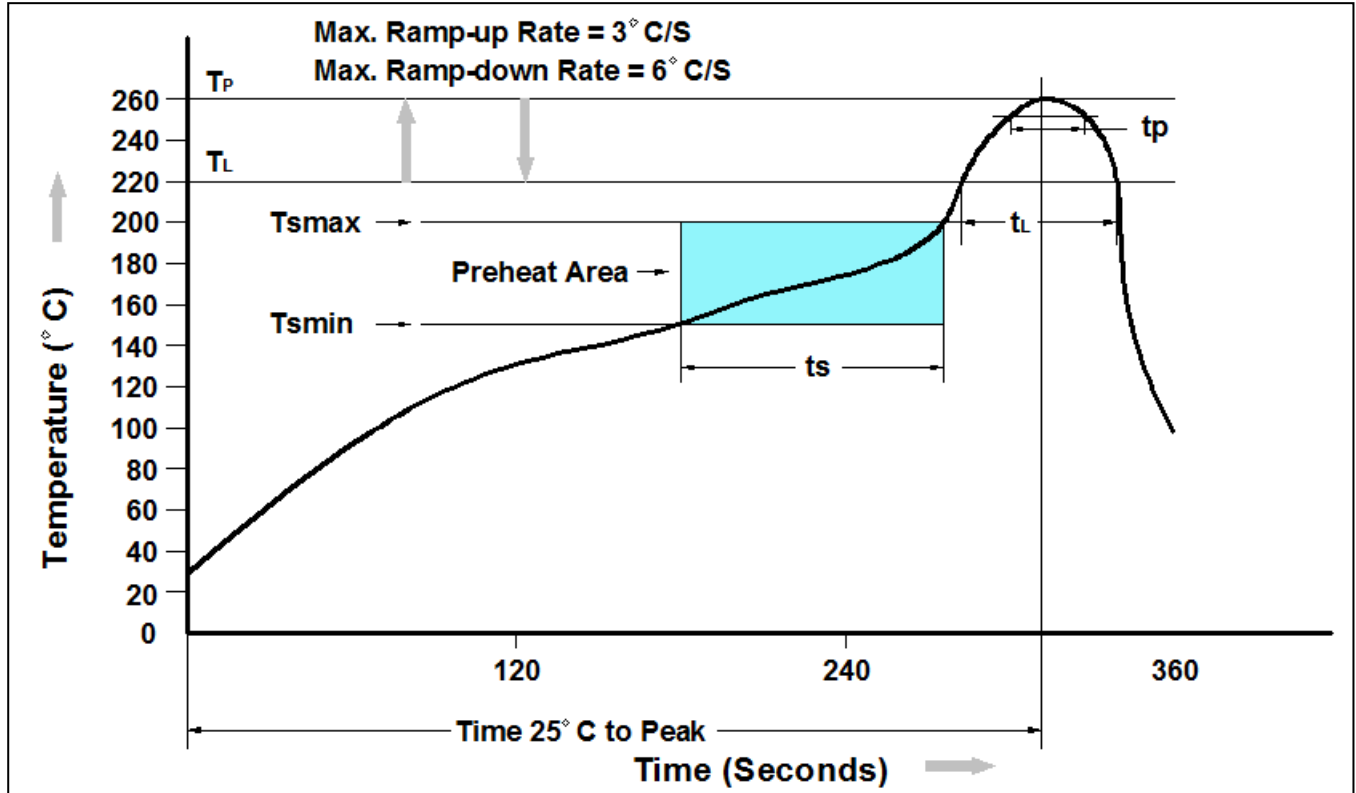


N-Ch and P-Ch Fast Switching MOSFET

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$V_{DS}=-100V$, $I_D=-1.0A$, $R_{DS(ON)}=650m\Omega$

➤ 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

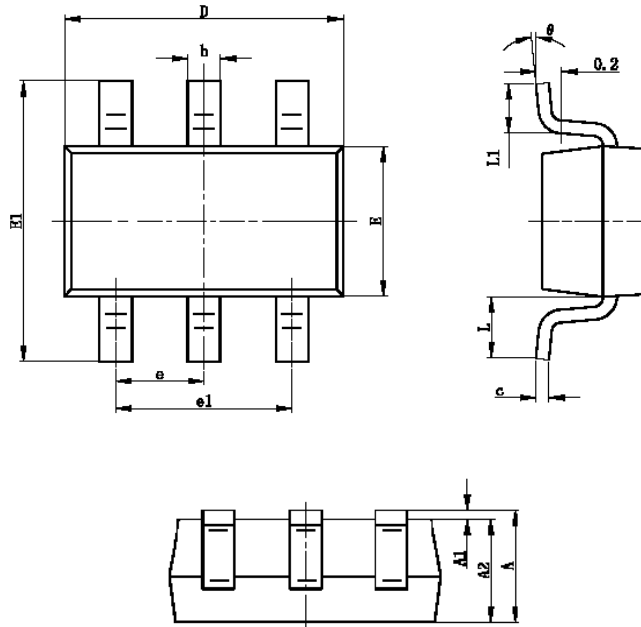
Part Number	Description	Quantity
PAC0010WM	SOT-23-6L	3000 pcs

N-Ch and P-Ch Fast Switching MOSFET

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➤ 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°

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