

### General Description

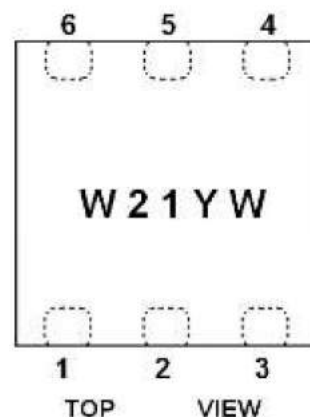
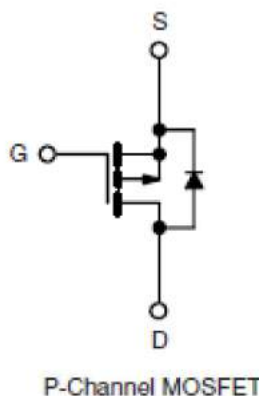
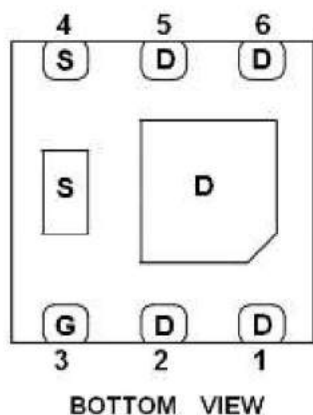
ME7203, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent  $R_{DS(ON)}$ , low gate charge.

These devices are particularly suited for low voltage power management, such as smart phone and notebook computer and other battery powered circuits, and low in-line power loss are needed in commercial industrial surface mount applications.

### Features

- -30V/-5.3A,  $R_{DS(ON)}=30m\Omega@V_{GS}=-10V$
- -30V/-4.2A,  $R_{DS(ON)}=40m\Omega@V_{GS}=-4.5V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- DFN2X2-6L package design

### Pin Description ( DFN2X2-6L )



### Application

- Load Switch, PA Switch and Battery Switch for Portable Devices

### Pin Define

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

### Ordering Information

- ※ W21 parts code
- ※ Y year code
- ※ W week code ( A ~ Z = 1 ~ 26 / a ~ z = 27 ~ 52 )
- ※ ME7203 : 7" Tape & Reel ; Pb- Free ; Halogen- Free

### Absolute Maximum Ratings

( $T_A=25^{\circ}C$  Unless otherwise noted)



Parameter	Symbol	Typical	Unit
Drain-Source Voltage	$V_{DSS}$	-30	V
Gate -Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current( $T_J=150^\circ\text{C}$ )	$I_D$	$T_A=25^\circ\text{C}$	-7.9
		$T_A=70^\circ\text{C}$	-6.3
Pulsed Drain Current	$I_{DM}$	-35	A
Continuous Source Current(Diode Conduction)	$I_S$	-2.9	A
Power Dissipation	$P_D$	$T_A=25^\circ\text{C}$	3.5
		$T_A=70^\circ\text{C}$	2.2
Operating Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55/150	$^\circ\text{C}$
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	36	$^\circ\text{C/W}$

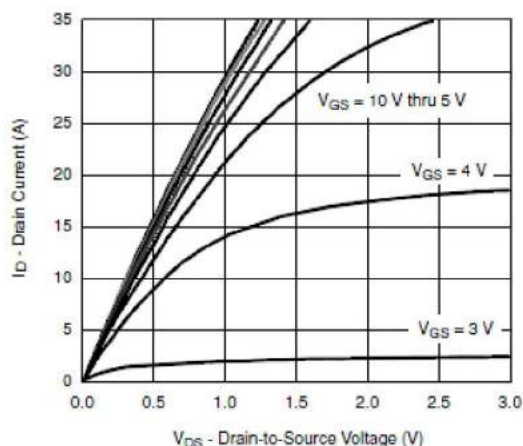
### Electrical Characteristics

( $T_A=25^\circ\text{C}$  Unless otherwise noted)

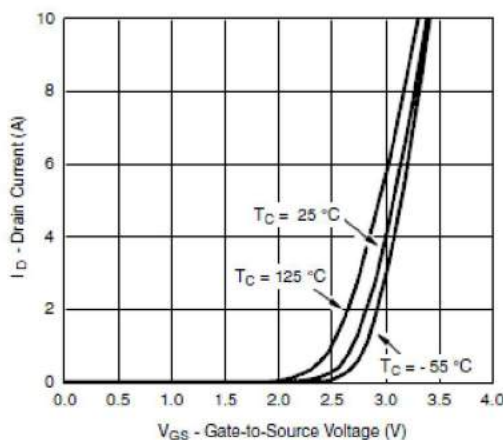
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu\text{A}$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu\text{A}$	-1.0		-2.0	V
Gate Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-24V, V_{GS}=0V$			-1	uA
		$V_{DS}=-24V, V_{GS}=0V$ $T_J=85^\circ\text{C}$			-30	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \leq -5V, V_{GS}=-10V$	-20			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-5.3A$		22	30	m $\Omega$
		$V_{GS}=-4.5V, I_D=-4.2A$		28	40	
Forward Transconductance	$g_{FS}$	$V_{DS}=-15V, I_D=-5.3A$		15		S
Diode Forward Voltage	$V_{SD}$	$I_S=-2.0A, V_{GS}=0V$		-0.75	-1.3	V
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	$V_{DS}=-10V, V_{GS}=-4.5V$ $I_D=-7.9A$		10	15	nC
Gate-Source Charge	$Q_{gs}$			3		
Gate-Drain Charge	$Q_{gd}$			4.5		
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V$ $f=1\text{MHz}$		950		pF
Output Capacitance	$C_{oss}$			150		
Reverse Transfer Capacitance	$C_{rss}$			120		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-15V, R_L=2.4\Omega$ $I_D=-6.3A, V_{GEN}=-10V$		10	20	ns
	$t_r$			12	25	
Turn-Off Time	$t_{d(off)}$	$R_G=1\Omega$		30	55	
	$t_f$			10	20	

### Typical Characteristics

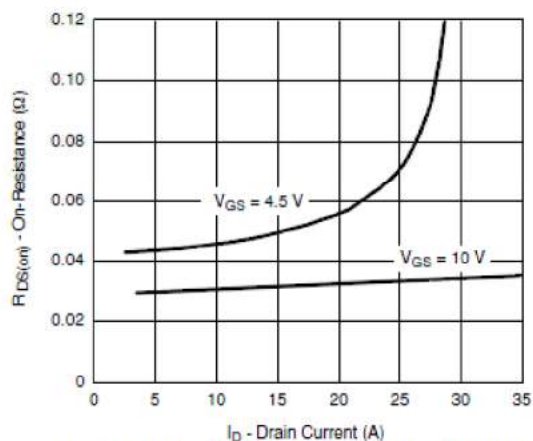
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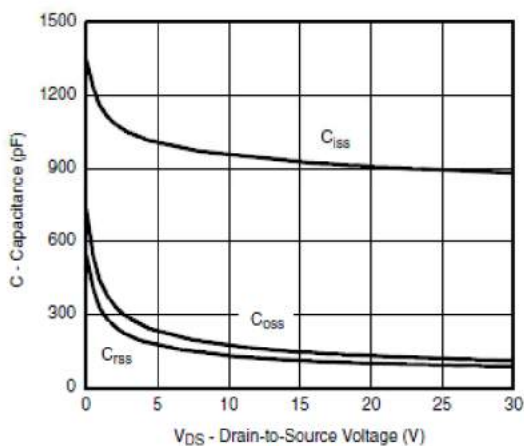
Output Characteristics



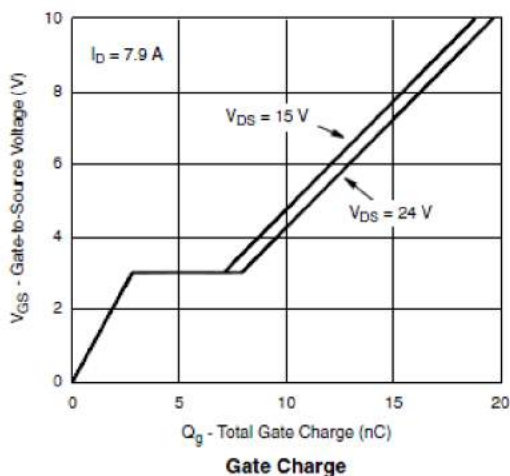
Transfer Characteristics



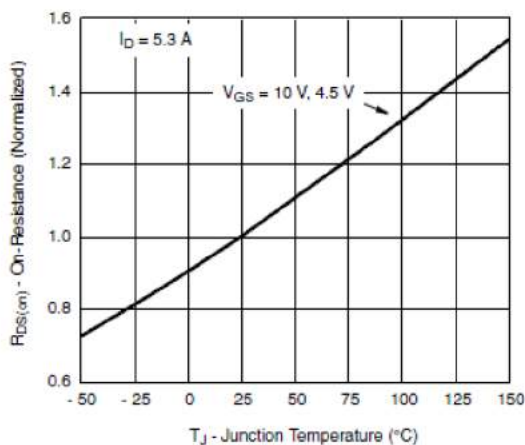
On-Resistance vs. Drain Current and Gate Voltage



Capacitance



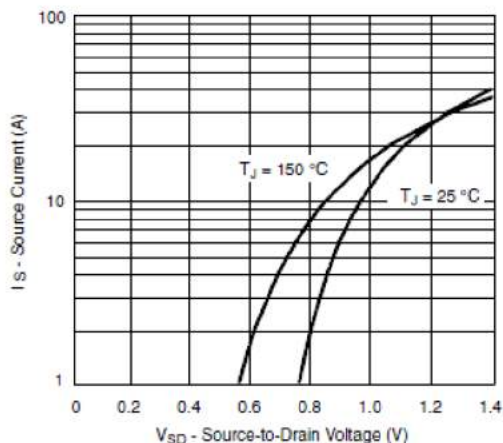
Gate Charge



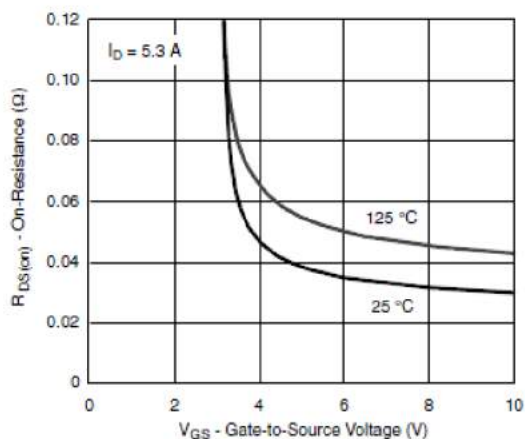
On-Resistance vs. Junction Temperature

Typical Characteristics

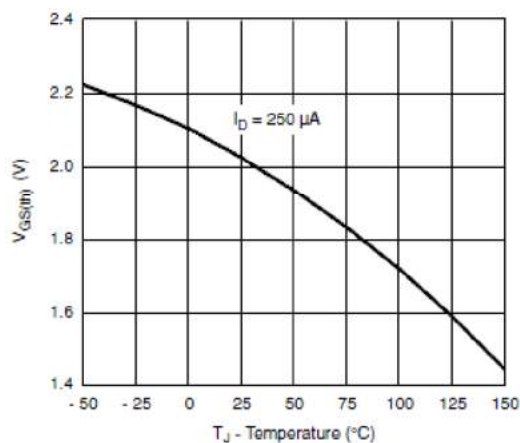




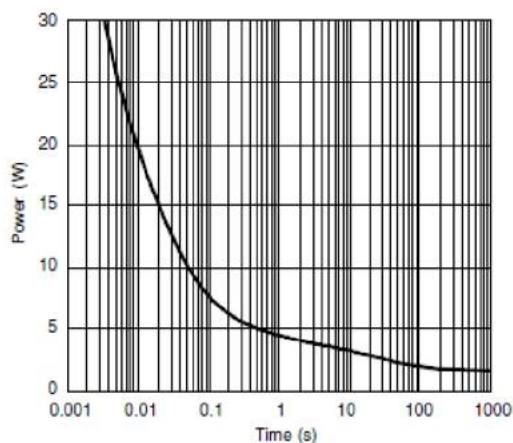
**Source-Drain Diode Forward Voltage**



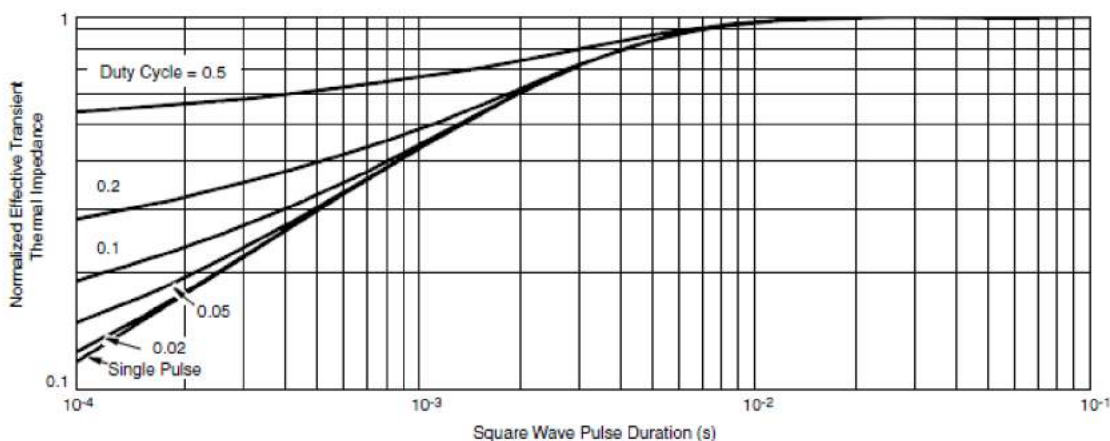
**On-Resistance vs. Gate-to-Source Voltage**



**Threshold Voltage**



**Single Pulse Power, Junction-to-Ambient**

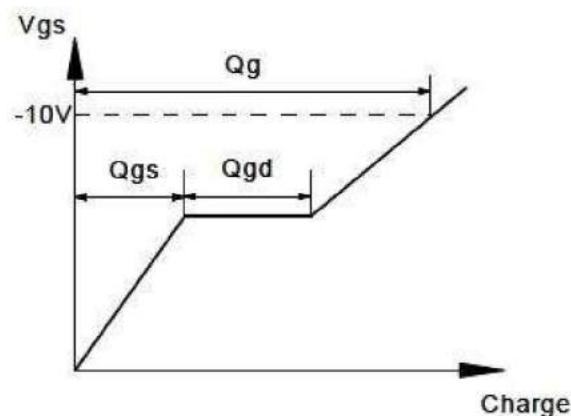
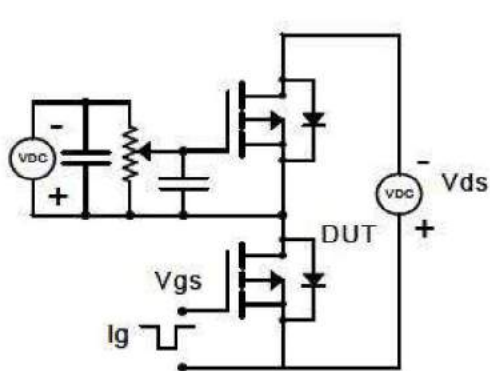


**Normalized Thermal Transient Impedance, Junction-to-Case**

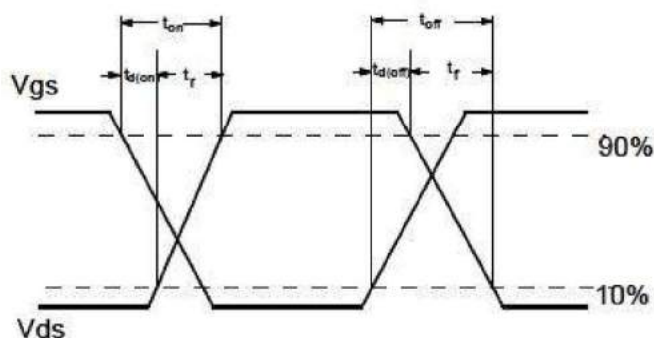
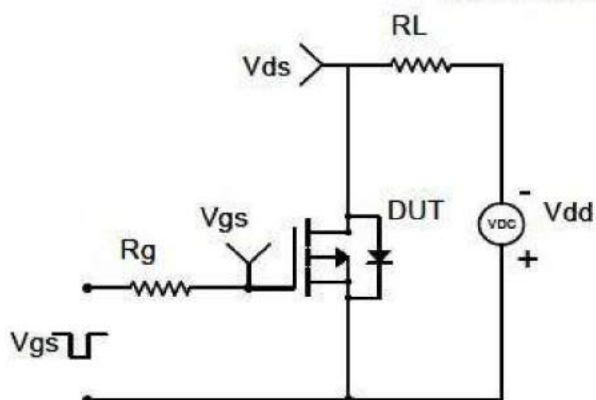
**Typical Characteristics**



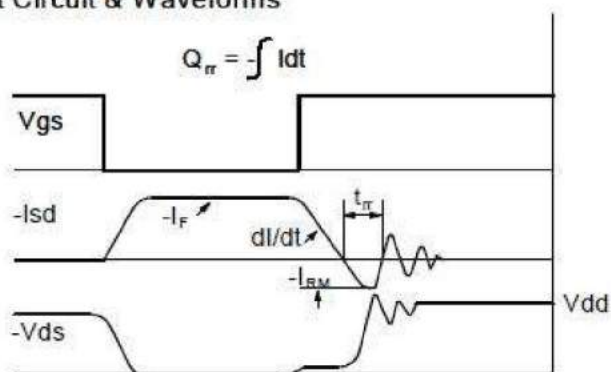
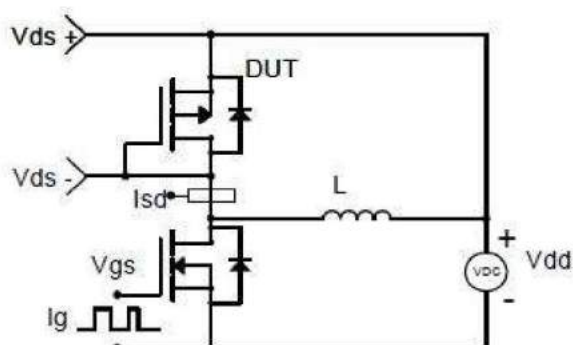
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

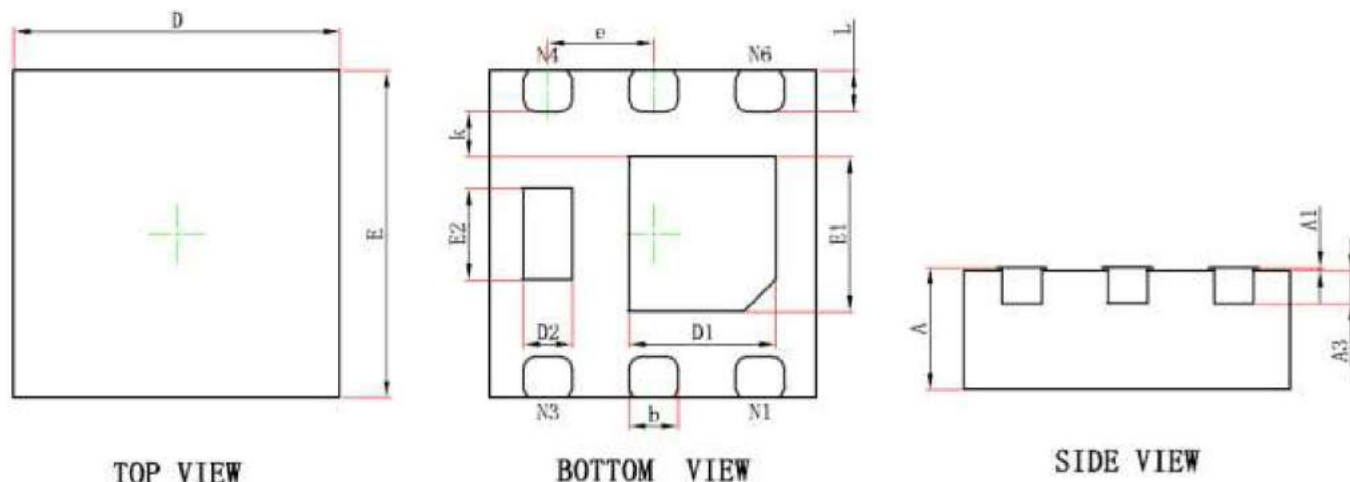


Diode Recovery Test Circuit & Waveforms



Package Information ( DFN2X2-6L )

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TOP VIEW

BOTTOM VIEW

SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
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	0.800	1.000	0.031	0.039
E1	0.850	1.050	0.033	0.041
D2	0.200	0.400	0.008	0.016
E2	0.460	0.660	0.018	0.026
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

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