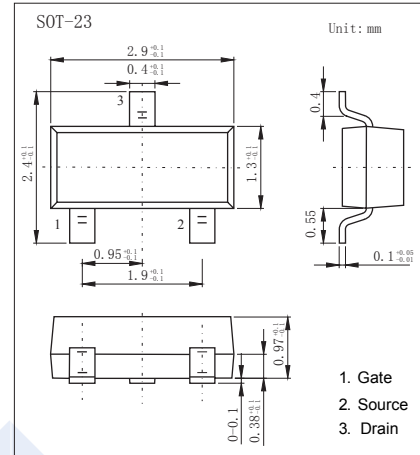
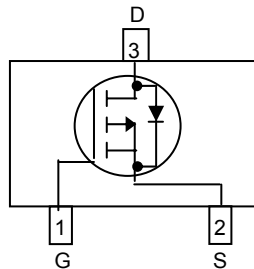


P-Channel MOSFET

WPM2015 (KPM2015)

■ Features

- $V_{DS} (V) = -20V$
- $I_D = -2.4 A$
- $R_{DS(ON)} < 110m\Omega$ ($V_{GS} = -4.5V$)
- $R_{DS(ON)} < 150m\Omega$ ($V_{GS} = -2.5V$)
- Supper high density cell design



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter		Symbol	10 S	Steady State	Unit
Drain-Source Voltage		V_{DS}	-20		V
Gate-Source Voltage		V_{GS}	± 8		
Continuous Drain Current (Note.1)	$T_a = 25^\circ C$	I_D	-2.4	-2.2	A
	$T_a = 70^\circ C$		-1.9	-1.7	
Power Dissipation (Note.1)	$T_a = 25^\circ C$	P_D	0.9	0.8	W
	$T_a = 70^\circ C$		0.5	0.5	
Continuous Drain Current (Note.2)	$T_a = 25^\circ C$	I_D	-2.2	-2	A
	$T_a = 70^\circ C$		-1.7	-1.6	
Power Dissipation (Note.2)	$T_a = 25^\circ C$	P_D	0.7	0.6	W
	$T_a = 70^\circ C$		0.5	0.4	
Pulsed Drain Current (Note.3)		I_{DM}	-10		A
Thermal Resistance.Junction- to-Ambient	(Note.1)	R_{thJA}	135	155	$^\circ C/W$
	(Note.2)		160	190	
Thermal Resistance.Junction- to-Case		R_{thJC}	—	75	
Junction Temperature		T_J	150		$^\circ C$
Lead Temperature		T_L	260		
Junction Storage Temperature Range		T_{stg}	-55 to 150		

Note.1: Surface mounted on FR-4 Board using 1 square inch pad size, 1oz copper

Note.2: Surface mounted on FR-4 board using minimum pad size, 1oz copper

Note.3: Pulse width < 380 μs , Duty Cycle < 2%

P-Channel MOSFET

WPM2015 (KPM2015)

■ Electrical Characteristics Ta = 25°C

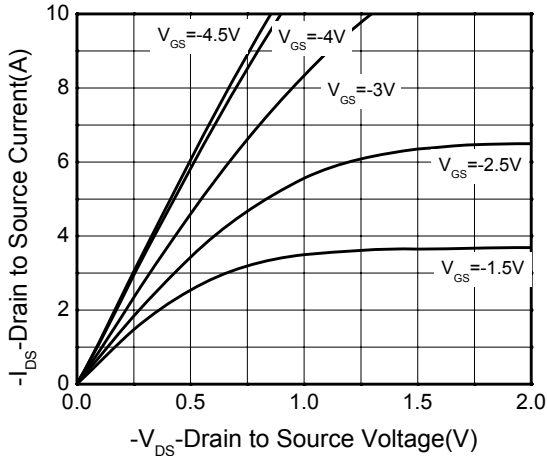
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =-250 μA, V _{GS} =0V	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-16V, V _{GS} =0V			-1	μA
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250 μA	-0.4		-0.81	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-2.7A			110	mΩ
		V _{GS} =-2.5V, I _D =-2.2A			150	
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-10V, f=1MHz		534		pF
Output Capacitance	C _{oss}			62		
Reverse Transfer Capacitance	C _{rss}			54		
Total Gate Charge	Q _g	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-2.7A		7.3		nC
Threshold Gate Charge	Q _{g(th)}			0.5		
Gate Source Charge	Q _{gs}			1.25		
Gate Drain Charge	Q _{gd}			1.15		
Turn-On DelayTime	t _{d(on)}	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-1.2A, R _G =6Ω		8		ns
Turn-On Rise Time	t _r			6.4		
Turn-Off DelayTime	t _{d(off)}			41		
Turn-Off Fall Time	t _f			7		
Maximum Body-Diode Continuous Current	I _S				-0.9	A
Diode Forward Voltage	V _{SD}	I _S =-0.9A, V _{GS} =0V			-1.5	V

■ Marking

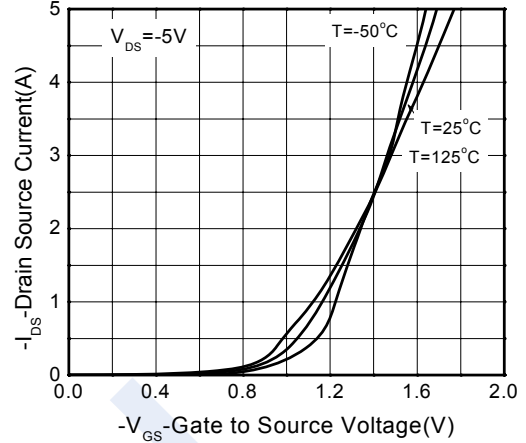
Marking	A1SHB
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P-Channel MOSFET WPM2015 (KPM2015)

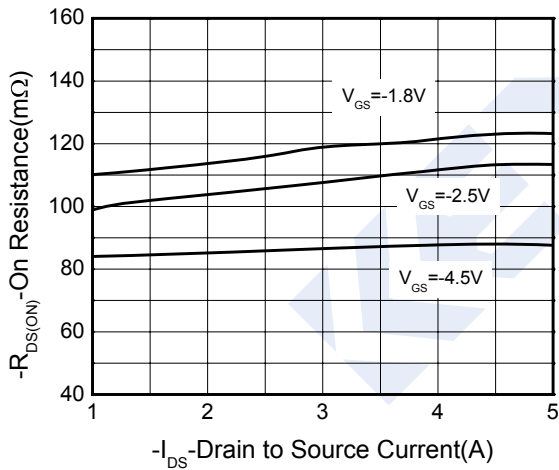
■ Typical Characteristics



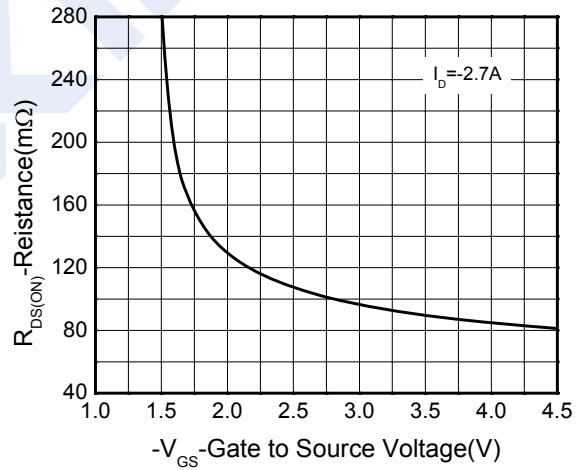
Output characteristics



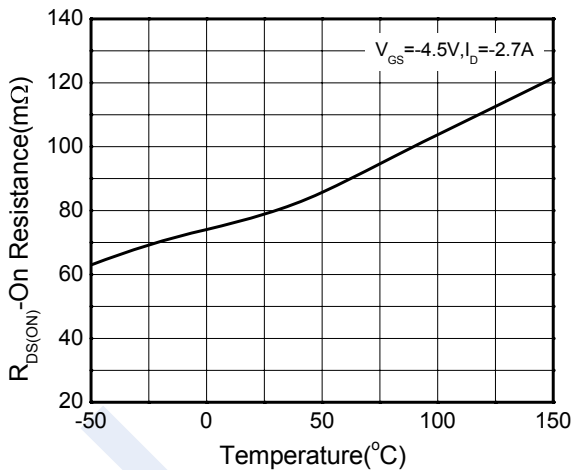
Transfer characteristics



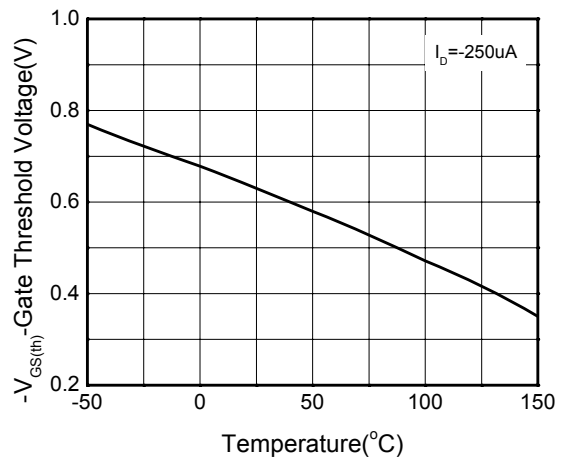
On-Resistance vs. Drain current



On-Resistance vs. Gate-to-Source voltage



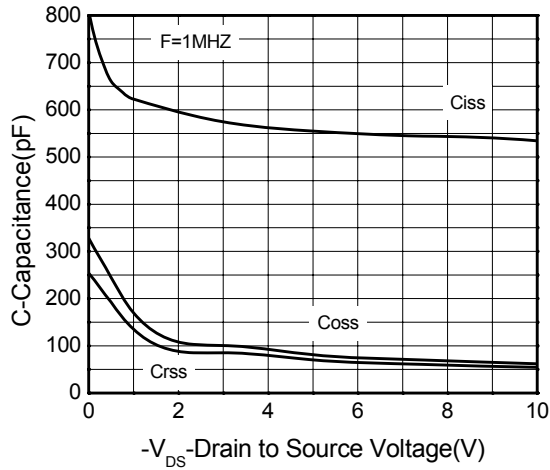
On-Resistance vs. Junction temperature



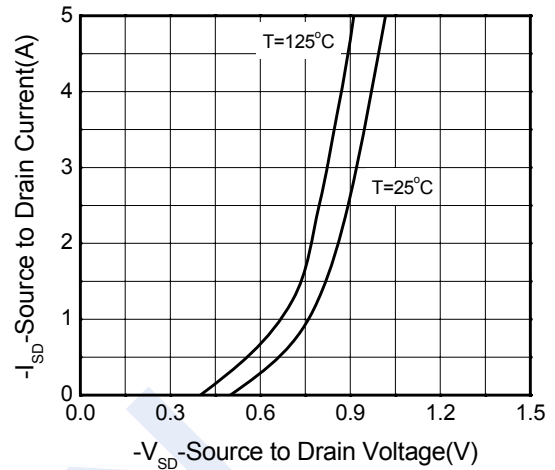
Threshold voltage vs. Temperature

P-Channel MOSFET WPM2015 (KPM2015)

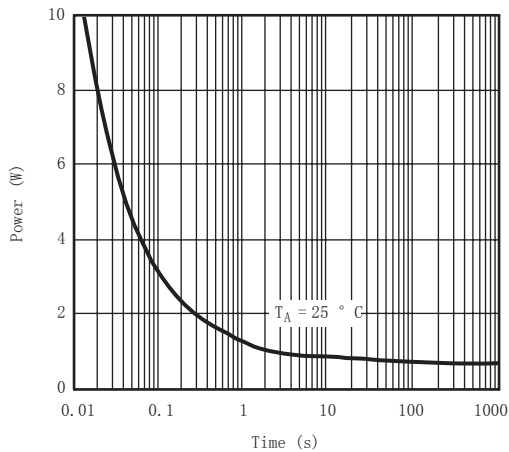
■ Typical Characteristics



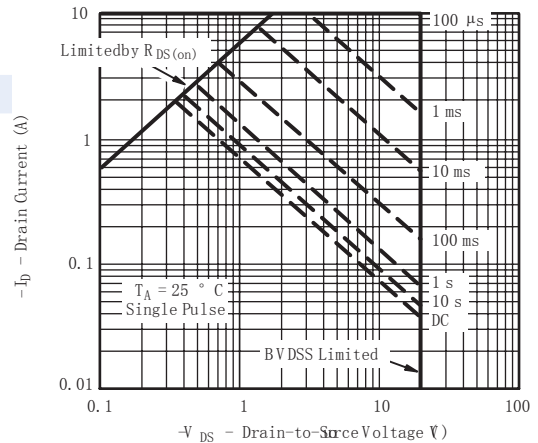
Capacitance



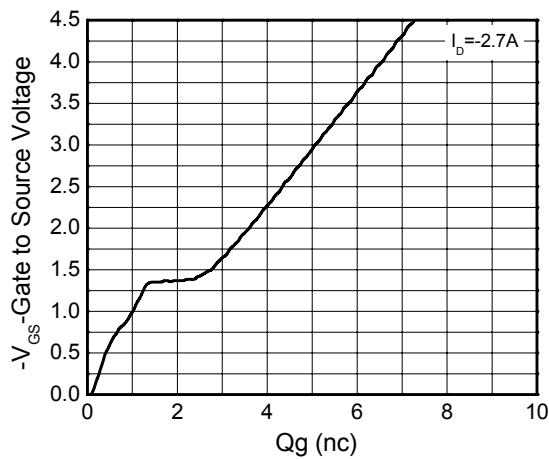
Body diode forward voltage



Single pulse power



Safe operating power

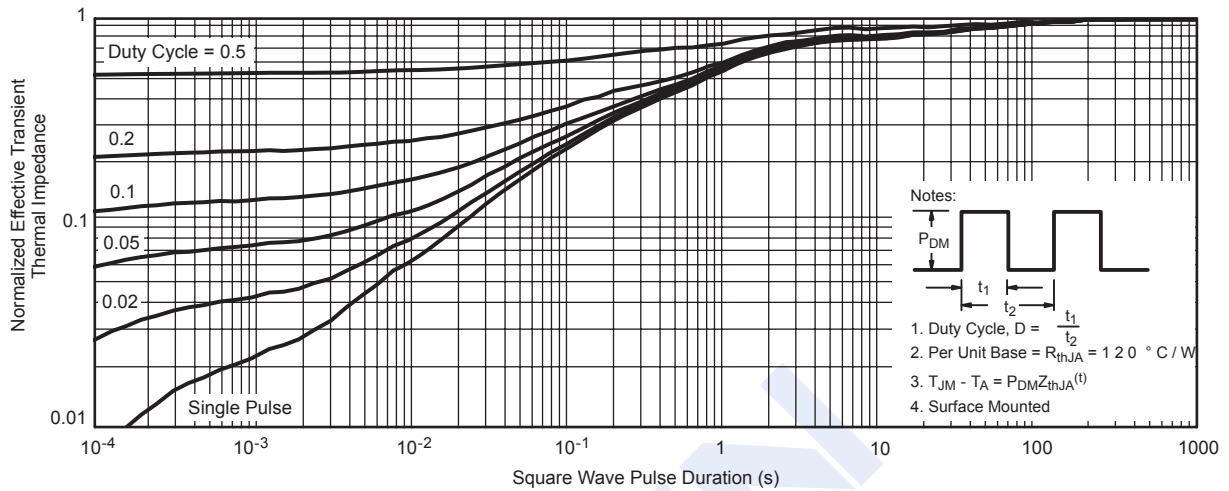


Gate Charge Characteristics

P-Channel MOSFET

WPM2015 (KPM2015)

■ Typical Characteristics



Transient thermal response (Junction-to-Ambient)