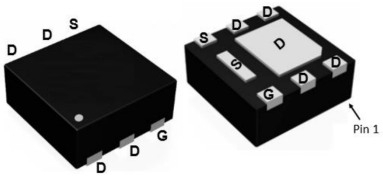
WM02P160R

P-Channel Enhancement MOSFET

Features

- Way-on Small Signal MOSFETs
- V_{DS}= -20V, I_D = -16A
  $R_{DS(on)}$ < 17mΩ @ V_{GS} = -4.5V
  $R_{DS(on)}$ < 21mΩ @ V_{GS} = -2.5V
- Trench LV MOSFET Technology

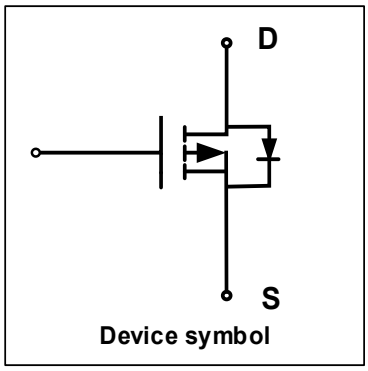


DFN2020-6L

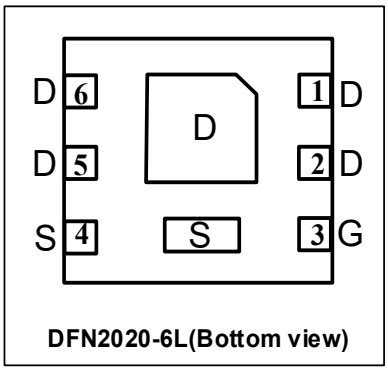
Mechanical Characteristics

- DFN2020-6L Package
- Marking : Making Code
- RoHS Compliant

Schematic & PIN Configuration



Device symbol



DFN2020-6L(Bottom view)

Absolute Maximum Rating (T_A=25°C unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±10	V
Continuous Drain Current	T_A = 25°C	I_D	-16	A
Pulsed Drain Current[1]		I_{DM}	-64	A
Power Dissipation	T_A = 25°C	P_D	3.5	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient[2]	$R_{\theta JA}$	35.7	°C/W

Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = -250μA	-20	-	-	V
Gate-body Leakage Current	I_{GSS}	V_{DS} = 0V, V_{GS} = ±10V	-	-	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -20V, V_{GS} = 0V	-	-	-1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-0.4	-0.65	-1	V
Drain-Source On-state Resistance[3]	$R_{DS(on)}$	V_{GS} = -4.5V, I_D = -10A	-	11	17	mΩ
		V_{GS} = -2.5V, I_D = -6.5A	-	14	21	
Dynamic Characteristics[4]						
Input Capacitance	C_{iss}	V_{DS} = -10V, V_{GS} = 0V, f = 1MHz	-	2895	-	pF
Output Capacitance	C_{oss}		-	303	-	
Reverse Transfer Capacitance	C_{rss}		-	280	-	
Switching Characteristics[4]						
Total Gate Charge	Q_g	V_{GS} = -4.5V, V_{DS} = -10V, I_D = -10A	-	28	-	nC
Gate-Source Charge	Q_{gs}		-	4	-	
Gate-Drain Charge	Q_{gd}		-	7	-	
Turn-on Delay Time	$t_{d(on)}$	V_{GS} = -4.5V, V_{DD} = -10V, I_D = -10A, R_G= 3Ω	-	9.5	-	ns
Turn-on Rise Time	t_r		-	15	-	
Turn-off Delay Time	$t_{d(off)}$		-	40	-	
Turn- off Fall Time	t_f		-	35	-	
Source-Drain Diode characteristics						
Body Diode Voltage[3]	V_{SD}	I_S = -1A, V_{GS} = 0V	-	-	-1.2	V
Continuous Source Current	I_S		-	-	-16	A

Notes:

1. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C.
2. The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.
4. This value is guaranteed by design hence it is not included in the production test.

Typical Characteristics

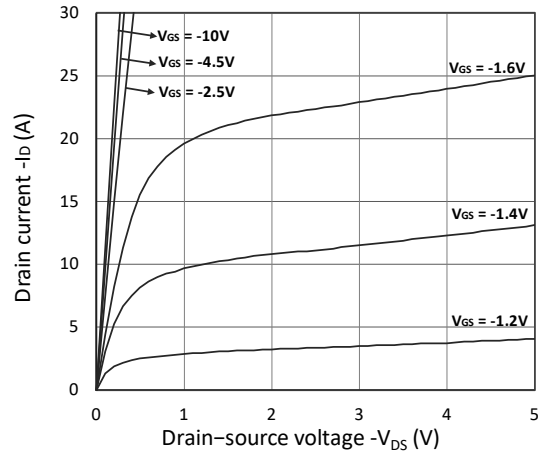


Figure 1. Output Characteristics

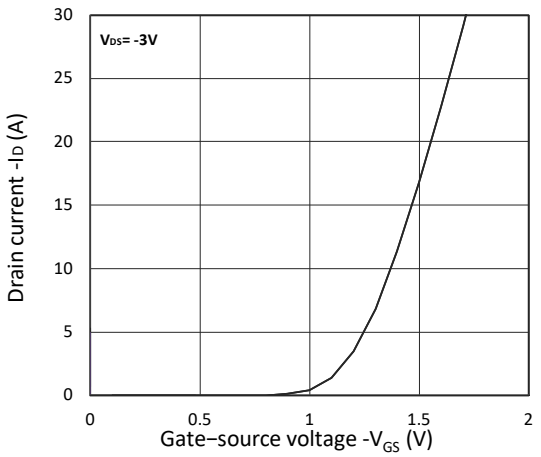


Figure 2. Transfer Characteristics

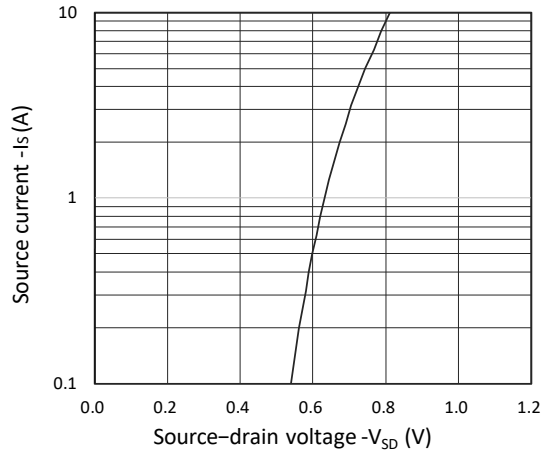


Figure 3. Forward Characteristics of Reverse

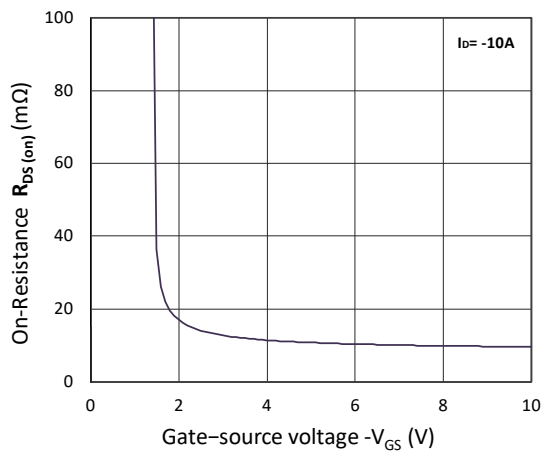


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

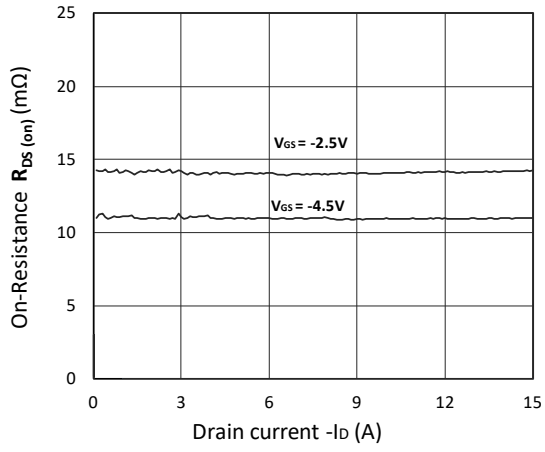


Figure 5. $R_{DS(ON)}$ vs. I_D

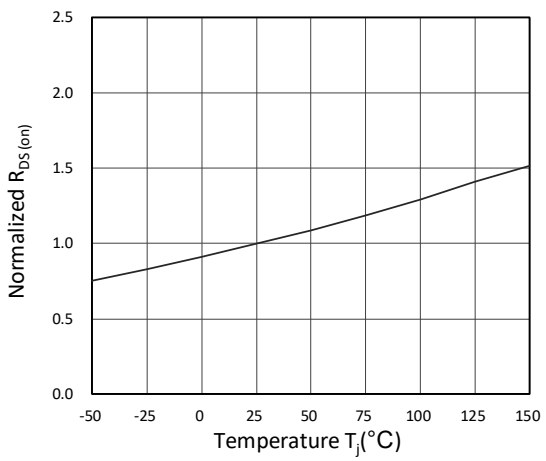


Figure 6. Normalized $R_{DS(on)}$ vs. Temperature

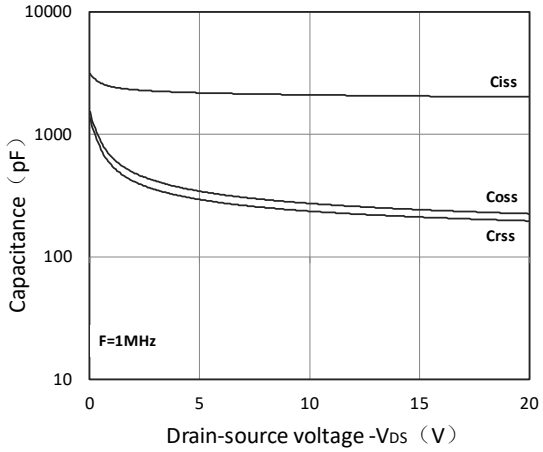


Figure 7. Capacitance Characteristics

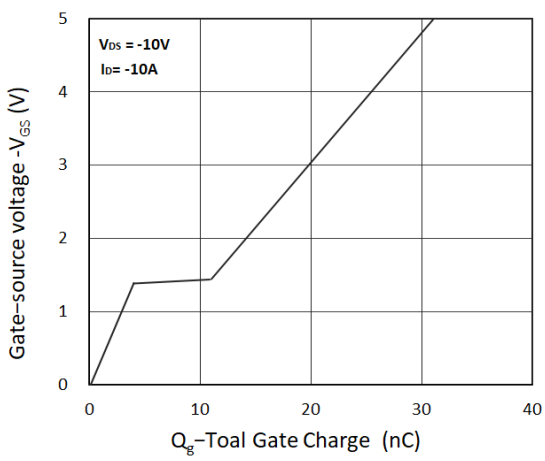
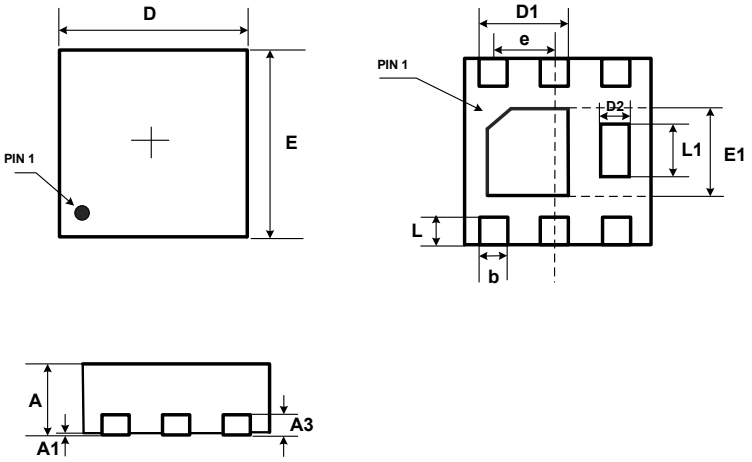
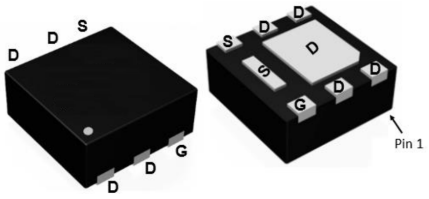


Figure 8. Gate Charge Characteristics

Outline Drawing – DFN2020-6L

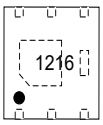
PACKAGE OUTLINE





SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.50	0.60	0.020	0.024
A1	0.00	0.05	0.00	0.002
A3	0.152REF		0.006REF	
b	0.25	0.35	0.010	0.014
D	1.90	2.10	0.075	0.083
D1	0.80	1.00	0.031	0.039
E	1.90	2.10	0.075	0.083
E1	0.80	1.00	0.031	0.039
L1	0.46	0.66	0.018	0.026
e	0.65BSC		0.026BSC	
D2	0.25	0.35	0.010	0.014
L	0.25	0.35	0.010	0.014

Marking Codes

Part Number	WM02P160R
Marking Code	

Package Information

Qty：3k/Reel