WM4C62160A

20V Common-Drain Dual N-Channel MOSFET

Description

WM4C62160A uses advanced power trench technology that has been especially tailored to minimize the on-state resistance This device is suitable for un-directional or bidirectional load switch, facilitated by its common-drain configuration

V_{SSS}(V)	I_S(A)	$R_{SS(on)}$TYP (mΩ)
20	8	14.0 @VGS=4.5V
		14.6 @VGS=4.0V
		15.0 @VGS=3.7V
		16.5 @VGS=3.1V
		19.0 @VGS=2.5V

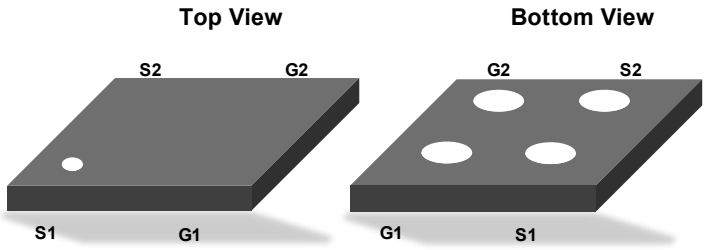
Features

- Super High Dense Cell for Low $R_{DS(ON)}$
- RoHS Compliant and Halogen-Free
- ESD Protected

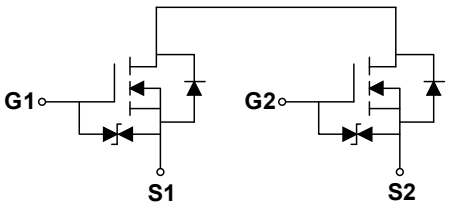
Applications

- Battery Protection
- Load Switch

Schematic & PIN Configuration



CSP1515-4L



Device Symbol

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

Parameter	Symbol	Value	Unit
Source -Source Voltage	V_{SSS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Source Current[1]	I_S	8	A
Pulsed Source Current[1,2]	I_{SP}	62	A
Total Power Dissipation[1]	P_D	1.7	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C
Maximum Junction-to-Ambient[1]	$R_{\theta JA}$	267	°C/W

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Source-Source Breakdown Voltage	V_{SSS}	V_{GS} = 0V, I_S = 250μA	20	-	-	V
Zero Gate Voltage Source Current	I_{SSS}	V_{SS} = 20V, V_{GS} = 0V	-	-	1	μA
Gate-body Leakage Current	I_{GSS}	V_{SS} = 0V, V_{GS} = ±8V	-	-	±10	μA
Gate-Threshold Voltage	$V_{GS(off)}$	V_{SS} = V_{GS}, I_S = 250μA	0.4	0.75	1.3	V
Source-Source on-Resistance	$R_{SS(on)}$	V_{GS} = 4.5V, I_S = 3A	8.5	14.0	19.5	mΩ
		V_{GS} = 4.0V, I_S = 3A	9.0	14.6	20.0	
		V_{GS} = 3.7V, I_S = 3A	9.0	15.0	21.0	
		V_{GS} = 3.1V, I_S = 3A	10.0	16.5	23.0	
		V_{GS} = 2.5V, I_S = 3A	11.0	19.0	30.0	
Forward Transconductance	$\|yg_{fs}\|$	V_{SS} = 5V, I_S = 3A	-	20	-	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{SS} = 10V, V_{GS} =0V, f =1MHz	-	193	-	pF
Output Capacitance	C_{oss}		-	158	-	
Reverse Transfer Capacitance	C_{rss}		-	45	-	
Switching Characteristics						
Total Gate Charge	$Q_{g(TOT)}$	V_{GS} = 4.5V, V_{SS} = 10V, I_S= 3A	-	13	-	nC
Threshold Gate Charge	$Q_{g(TH)}$			1.7		
Gate-to-Source Charge	Q_{gs}		-	2.2	-	
Gate-to-Drain Charge	Q_{gd}		-	3	-	
Turn-on Delay Time	$t_{d(on)}$	V_{GS} =4.5V, V_{SS}= 10V, R_G = 3Ω , I_S = 3A	-	0.9	-	μs
Rise Time	t_r		-	1.9	-	
Turn-off Delay Time	$t_{d(off)}$		-	6.3	-	
Fall Time	t_f		-	7.3	-	
Drain-Source Diode Characteristics						
Forward Source to Source Voltage	$V_{F(S-S)}$	I_S = 1A, V_{GS} = 0V	-	-	1.2	V

Notes:

1. Mounted on FR4 board (25.4mm x 25.4mm x t1.0mm) using the minimum recommended pad size (36μm Copper).

2. t = 10μs, duty cycle ≤ 1%.

Typical Characteristics

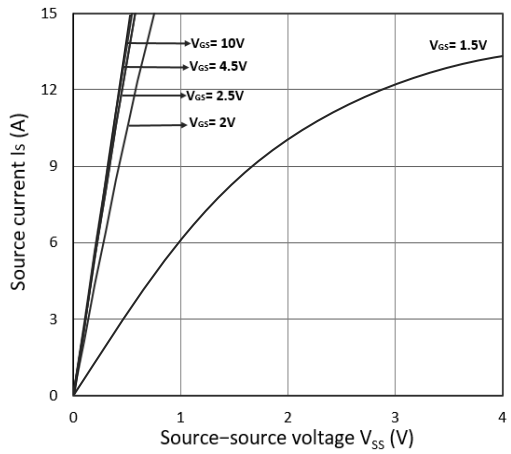


Figure 1. Output Characteristics

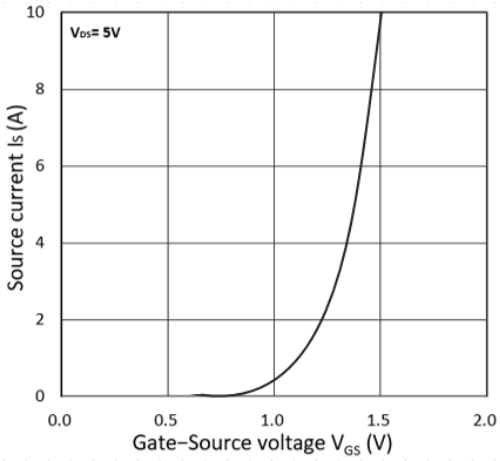


Figure 2. Transfer Characteristics

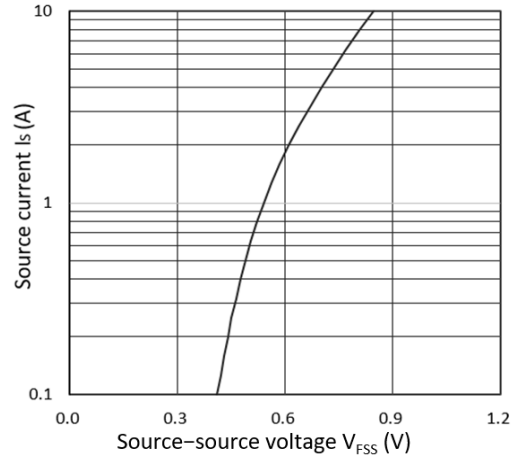


Figure 3. Forward Characteristics of Reverse

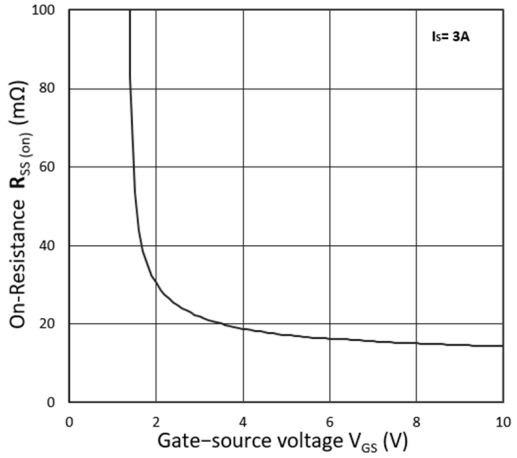


Figure 4. $R_{SS(ON)}$ vs. V_{GS}

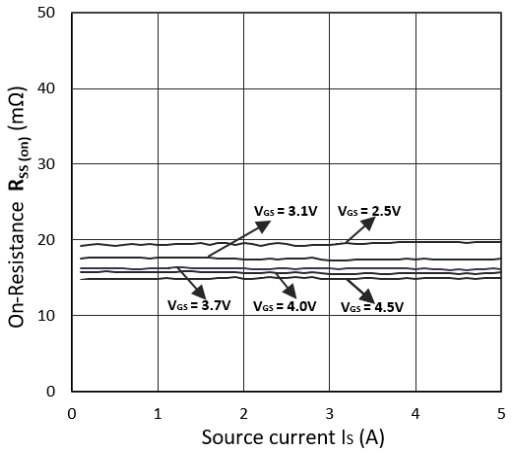


Figure 5. $R_{SS(ON)}$ vs. I_S

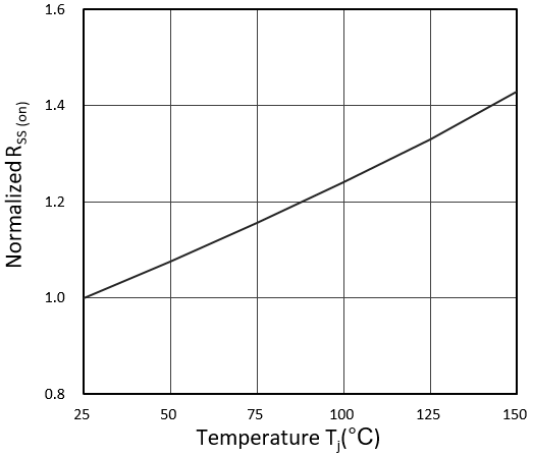


Figure 6. Normalized $R_{SS(on)}$ vs. Temperature

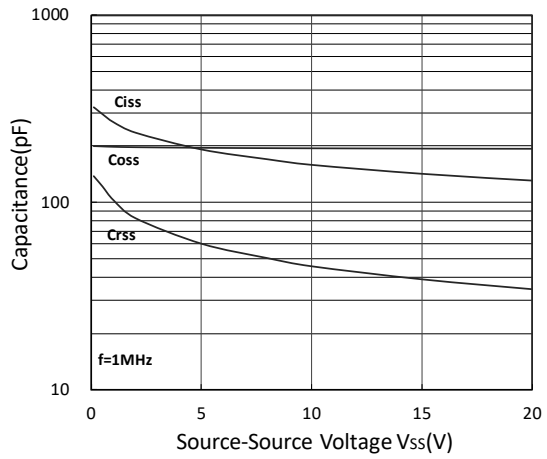


Figure 7. Capacitance Characteristics

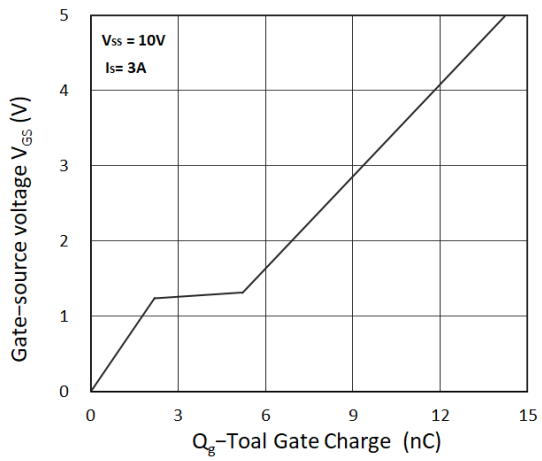
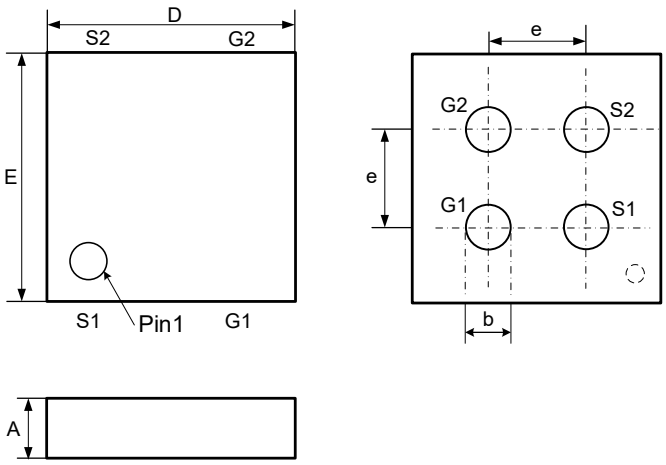


Figure 8. Gate Charge Characteristics

Outline Drawing CSP1515-4L

PACKAGE OUTLINE



CSP1515-4L

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	1.45	1.50	1.55
E	1.45	1.50	1.55
e		0.65BSC	
b	0.24	0.27	0.30
A	0.16	0.18	0.20

Marking Codes

Part Number	WM4C62160A
Marking Code	160 WXX ● 160= Device code WXX= Date code

Package Information

Qty： 3k/Reel

CONTACT INFORMATION

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