

Description

This is 12V 14A Common-Drain Dual N-channel mosfet in a CSP2.98*1.49-10L plastic package.

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

Features

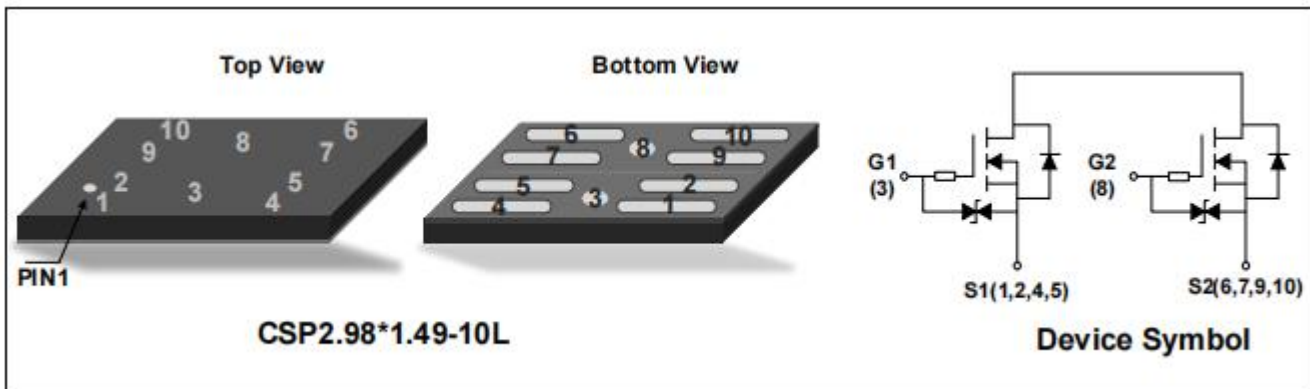
- CSP(Chip Size Package)
- Super High Dense Cell for Low $R_{SS(ON)}$
- RoHS Compliant and Halogen-Free
- ESD Protected

Applications

- Battery protection
- Load switch

$V_{SSS}(V)$	$I_S(A)$	$R_{SS(on)}TYP (m\Omega)$
12	14	2.0 @VGS=4.5V
		2.1 @VGS=3.8V
		2.4 @VGS=3.1V
		3.1 @VGS=2.5V

Equivalent Circuit & Pinning



Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Value	Unit
Source -Source Voltage		V_{SSS}	12	V
Gate-Source Voltage		V_{GSS}	±8	V
Continuous Source Current	DC ¹	I_{S1}	14	A
	DC ²	I_{S2}	30	A
Pulsed Source Current ³		I_{SP}	138	A
Total Power Dissipation	DC ¹	P_{D1}	0.57	W
	DC ²	P_{D2}	3.5	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C
Maximum Junction-to-Ambient	DC ¹	R_{θJA1}	210	°C/W
	DC ²	R_{θJA2}	36	°C/W

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Source-Source Breakdown Voltage	V _{SSS}	V _{GS} = 0V, I _S = 250μA	12	-	-	V
Zero Gate Voltage Source Current	I _{SSS}	V _{SS} = 12V, V _{GS} = 0V	-	-	1	μA
Gate-body Leakage Current	I _{GSS}	V _{SS} = 0V, V _{GS} = ±8V	-	-	±100	μA
Gate-Threshold Voltage	V _{GS(off)}	V _{SS} = 8V, I _S = 250μA	0.4	0.9	1.4	V
Source-Source on-Resistance	R _{SS(on)}	V _{GS} = 4.5V, I _S = 6A	1.5	2.0	2.7	mΩ
		V _{GS} = 3.8V, I _S = 6A	1.6	2.1	2.8	
		V _{GS} = 3.1V, I _S = 6A	1.7	2.4	3.9	
		V _{GS} = 2.5V, I _S = 6A	2.0	3.1	6.0	
Forward Transconductance	y _{gfs}	V _{SS} = 5V, I _S = 6A	-	40	-	S
Dynamic Characteristics ¹						
Input Capacitance	C _{iss}	V _{SS} = 10V, V _{GS} =0V, f =100kHz	-	4012	-	pF
Output Capacitance	C _{oss}		-	455	-	
Reverse Transfer Capacitance	C _{rss}		-	139	-	
Switching Characteristics						
Total Gate Charge ¹	Q _g	V _{GS} = 4.5V, V _{SS} = 6V, I _S = 6A	-	37	-	nC
Gate Source Charge ¹	Q _{gs}		-	7.2	-	
Gate Drain Charge ¹	Q _{gd}		-	4.8	-	
Turn-on Delay Time ^{1,2}	t _{d(on)}	V _{GS} = 4.5V, V _{SS} = 6V, I _S = 6A	-	0.95	-	μs
Rise Time ^{1,2}	t _r		-	1.33	-	
Turn-off Delay Time ^{1,2}	t _{d(off)}		-	2.90	-	
Fall Time ^{1,2}	t _f		-	3.61	-	
Source-Source Diode Characteristics						
Forward Source to Source Voltage	V _{F(S-S)}	I _S = 6A, 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 (36 μm Copper).
2. Mounted on Ceramic substrate (70mm x 70mm x t1.0mm)
3. $t = 10\mu s$, duty cycle $\leq 1\%$.

Typical Characteristics

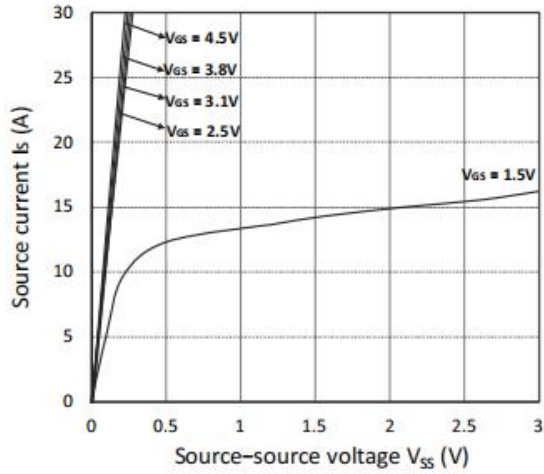


Figure 1. Output Characteristics

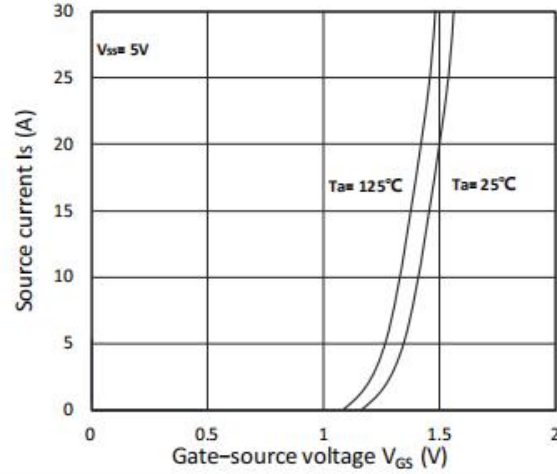


Figure 2. Transfer Characteristics

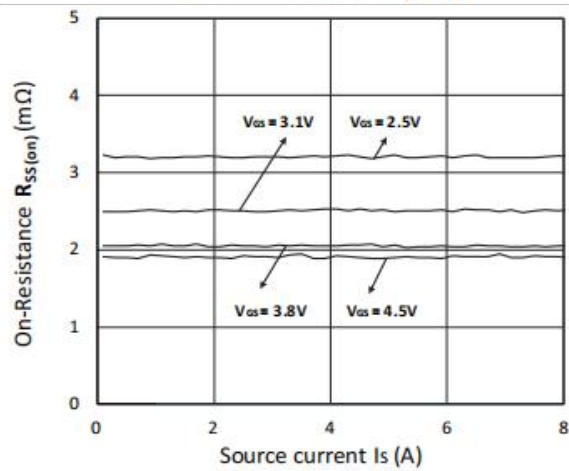
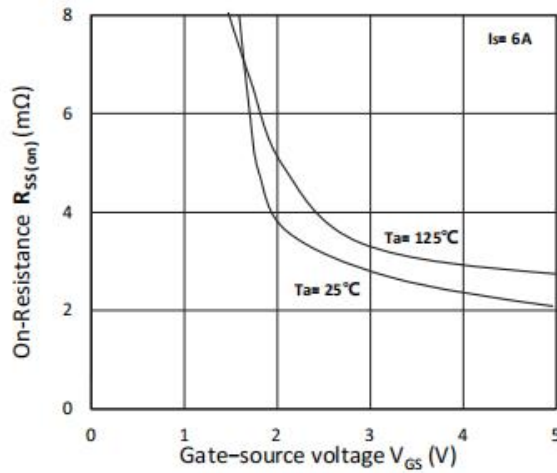
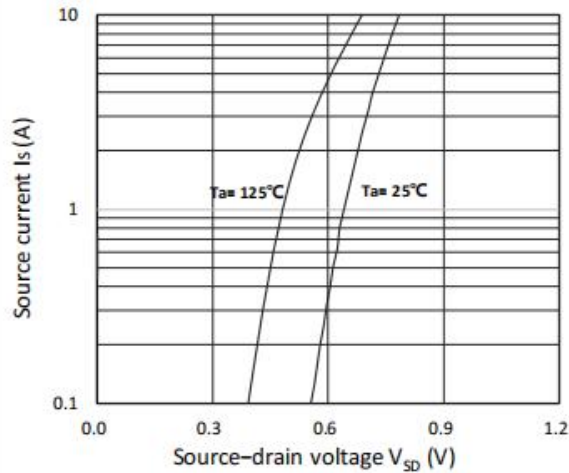


Figure 5. $R_{SS(ON)}$ vs. I_S

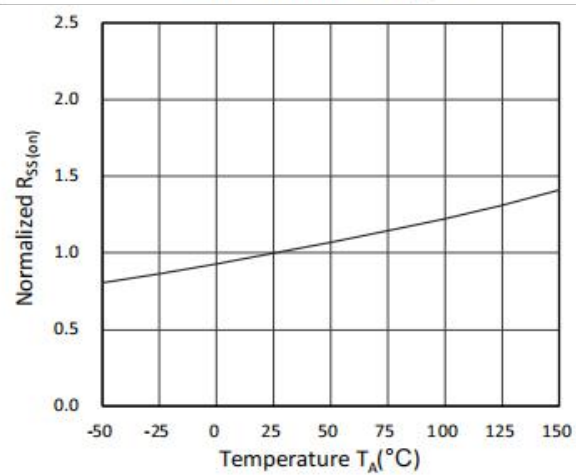


Figure 6. Normalized $R_{SS(ON)}$ vs. Temperature

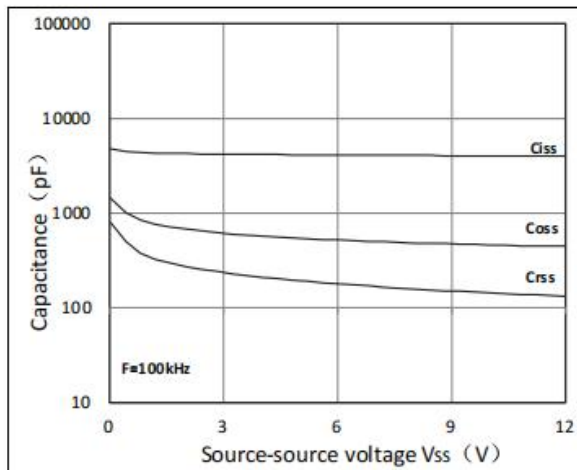


Figure 7. Capacitance Characteristics

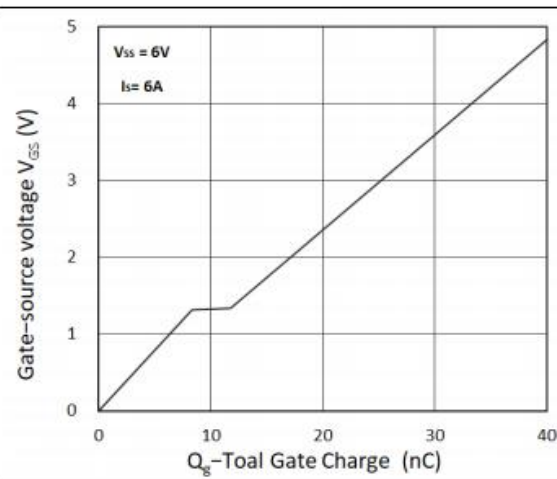


Figure 8. Gate Charge Characteristics

Marking Instructions

Part Number	CT2N12210C
Marking Code	12210 XXXX XXX • 12210= Device code XXXX XXX= Date code

Package Information

Qty: 8k/Reel

Outline Drawing CSP2.98*1.49-10L

