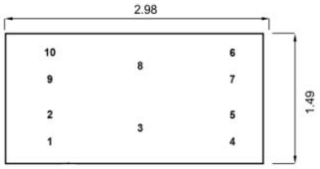
Product Summary

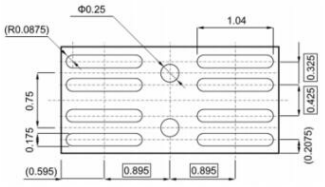
V_{SSS}	$R_{SS(ON)}$ max	I_{SS}
20V	<4.6mΩ @V_{GS}=4.5V	25A
	<4.8mΩ @V_{GS}=3.8V	
	<5.4mΩ @V_{GS}=3.1V	
	<6.7mΩ @V_{GS}=2.5V	

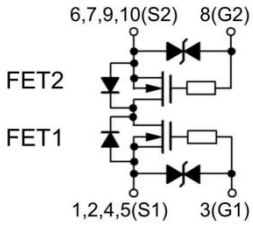
Package & Internal Circuit

(Top View)



(Bottom View)





Description and Applications

- Battery protection switch
- Mobile device battery charging and discharging

Ordering Information

Part Number	Package Type	Package Qty
CFC22035	WLCSP_2.98x1.49	8,000/Tape & Reel

Marking Information

Green product

22035--Part Number
Y--Year
W--Week
LT--Lot sequence

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

Parameter		Symbol	Value	Units
Source-Source Voltage		V_{SS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Source Current - Continuous	T_A=25°C	I_{SS}	25	A
Pulsed Source Current		I_{SM}	120	A
Power Dissipation	T_A=25°C	P_D	2.5	W
Junction and Storage Temperature Range		T_J ,T_{STG}	-55 to 150	°C

Thermal Characteristics

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient	t ≤ 10s	$R_{\theta JA}$		30	°C/W
Maximum Junction-to-Ambient	Steady-State	$R_{\theta JA}$		40	°C/W

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Static Parameters						
BV_{SSS}	Source-Source Breakdown Voltage	I_{SS}= 250μA, V_{GS}=0V	20			V
I_{SSS}	Zero Gate Voltage Drain Current	V_{SS}=20V, V_{GS}=0V			1	μA
		T_J =55℃			5	μA
I_{GSS}	Gate-Body leakage current	V_{SS}=0V, V_{GS}= ±12V			±10	μA
$V_{GS(th)}$	Gate Threshold Voltage	V_{SS}=V_{GS}, I_{SS}=250μA	0.4	0.9	1.5	V
$R_{SS(ON)}$	Static-Source to Source on-Resistance	V_{GS}=4.5V, I_{SS}=6A	3.3	3.9	4.6	mΩ
		V_{GS}=3.8V, I_{SS}=6A	3.5	4.1	4.8	mΩ
		V_{GS}=3.1V, I_{SS}=6A	3.9	4.6	5.4	mΩ
		V_{GS}=2.5V, I_{SS}=6A	4.8	5.7	6.7	mΩ
g_{FS}	Forward Transconductance	V_{SS}=5V, I_{SS}=5A		80		S
V_{FSS}	Forward Source to Source Voltage	V_{GS}= 0V, I_{SS}=6A		0.61	1.2	V
Dynamic parameters						
C_{iss}	Input Capacitance	V_{GS}=0V V_{SS}=10V f=100KHz		4131		pF
C_{oss}	Output Capacitance			394		pF
C_{rss}	Reverse Transfer Capacitance			108		pF
Switching Parameters						
Q_g	Total Gate Charge	V_{GS}=4.5V V_{SS}=6V I_{SS}=6A		35		nC
Q_{gs}	Gate Source Charge			7.4		nC
Q_{gd}	Gate Drain Charge			14		nC
$t_{D(on)}$	Turn-On Delay Time	V_{GS}=4.5V V_{SS}=6V R_L=1Ω R_G=3Ω		1.0		μs
t_r	Turn-On Rise Time			2.1		μs
$t_{D(off)}$	Turn-Off Delay Time			4.9		μs
t_f	Turn-Off Fall Time			3.8		μs

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

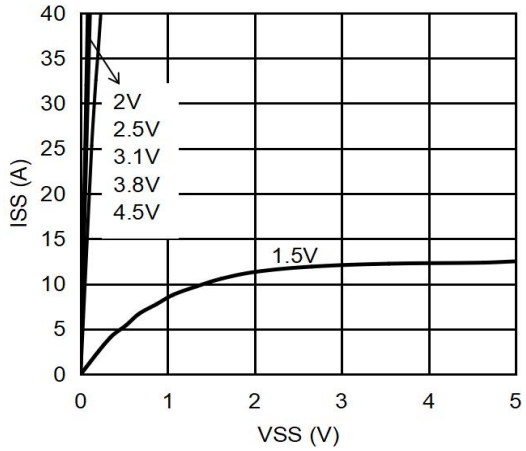


Figure 1: On-Region Characteristics

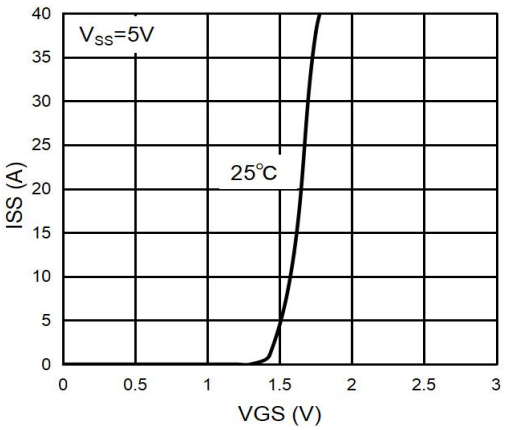


Figure 2: Transfer Characteristics

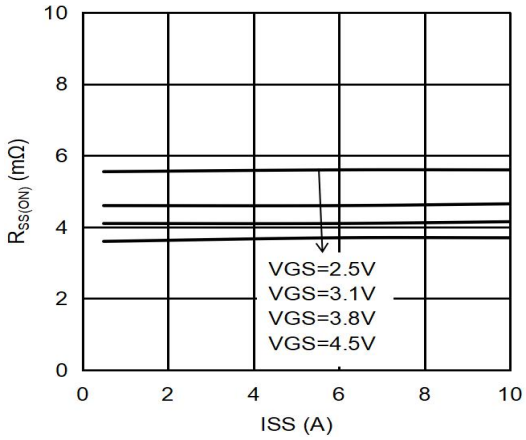


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

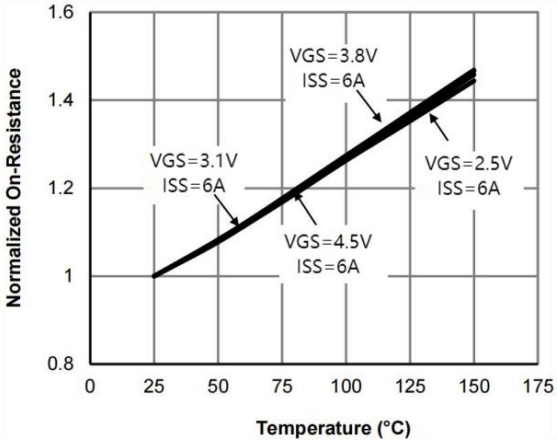


Figure 4: On-Resistance vs. Junction Temperature

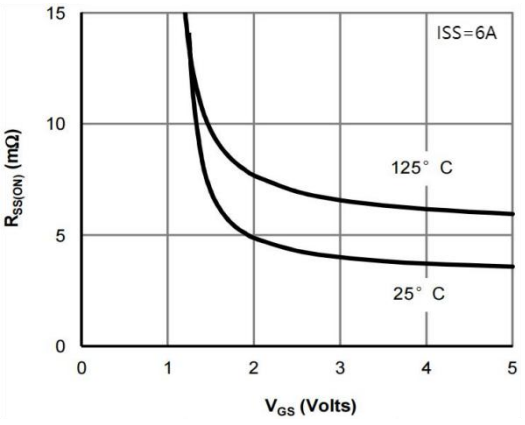


Figure 5: On-Resistance vs. Gate-Source Voltage

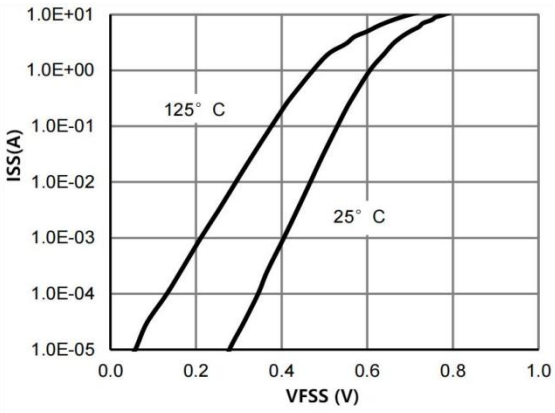


Figure 6: Forward Source to Source Characteristics

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

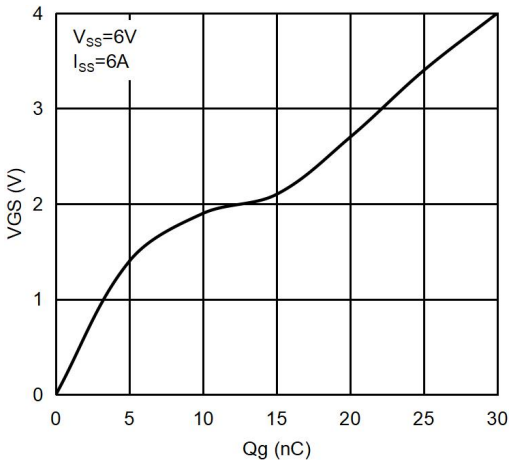


Figure 7: Gate-Charge Characteristics

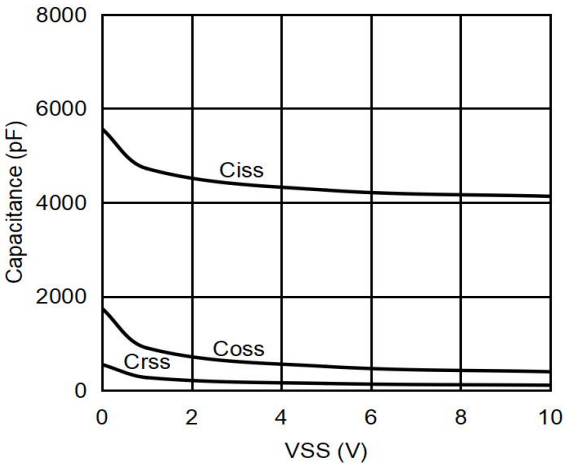


Figure 8: Capacitance Characteristics

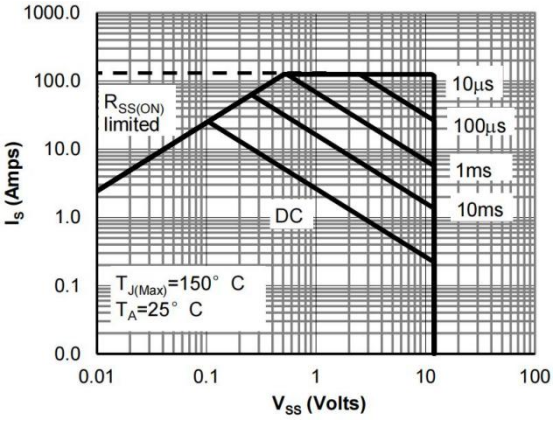


Figure 9: Maximum Forward Biased Safe Operating Area

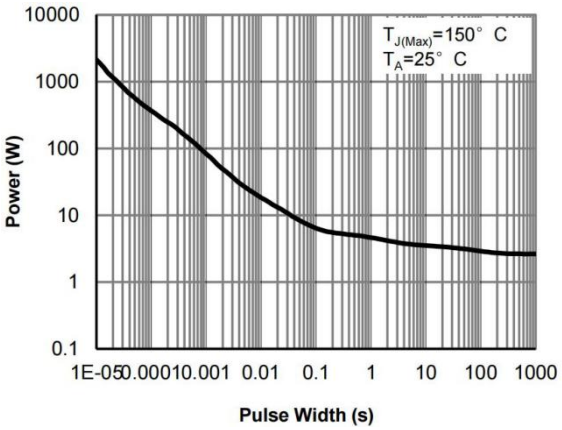
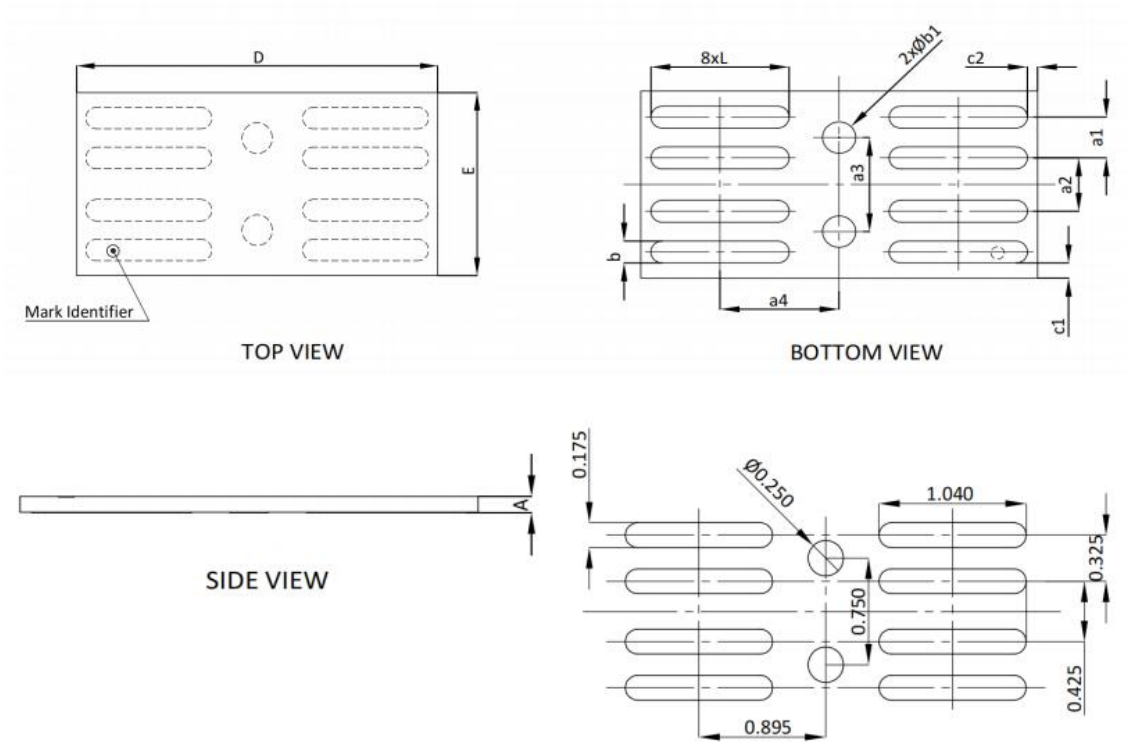


Figure 10: Single Pulse Power Rating Junction-to Ambient

CSP2.98x1.49 Package Information



SYMBOLS	DIMENSION IN MM			DIMENSION IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.064	0.094	0.124	0.0025	0.0037	0.0048
D	2.950	2.980	3.010	0.1161	0.1173	0.1185
E	1.460	1.490	1.520	0.0575	0.0587	0.0598
L	1.010	1.040	1.070	0.0398	0.0409	0.0421
a1	0.325BSC			0.0128BSC		
a2	0.425BSC			0.0167BSC		
a3	0.750BSC			0.0295BSC		
a4	0.895BSC			0.0352BSC		
b	0.145	0.175	0.205	0.0057	0.0069	0.0081
b1	0.220	0.250	0.280	0.0087	0.0098	0.0110
c1	—	0.120	—	—	0.0047	—
c2	—	0.075	—	—	0.0030	

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