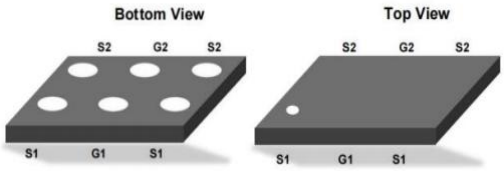
Product Summary

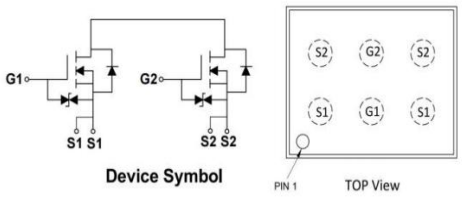
V_{SSS}	$R_{SS(ON)}$ max
12V	<5.5mΩ @V_{GS}=4.5V
	<6.1mΩ @V_{GS}=3.8V
	<7.8mΩ @V_{GS}=3.1V
	<13.8mΩ @V_{GS}=2.5V

Package & Internal Circuit



Description and Applications

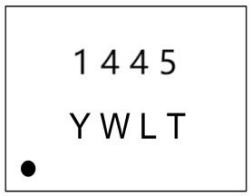
- Battery protection switch
- Mobile device battery charging and discharging
- With ESD Protection, HBM Class 2



Ordering Information

Part Number	Package Type	Package Qty
CFC1445	WLCSP_1.90x1.25_6L	8,000/Tape & Reel

Marking Information



Green product

1445--Part Number
Y--Year
W--Week
LT--Lot sequence

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

Parameter		Symbol	Value	Units
Source-Source Voltage		V_{SS}	12	V
Gate-Source Voltage		V_{GS}	±8	V
Source Current - Continuous[Note1]	DC[1]	I_{SS1}	8	A
	DC[2]	I_{SS2}	17	A
Pulsed Source Current		I_{SM}	100	A
Power Dissipation	DC[1]	P_{D1}	0.45	W
	DC[2]	P_{D2}	2.1	W
Junction and Storage Temperature Range		T_J ,T_{STG}	-55 to 150	°C

Note1.I_{SS} rated value is based on bare silicon.Mounted on 70mmx70mm FR-4 board.

Thermal Characteristics

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient	DC[1]	$R_{\theta JA}$		278	°C/W
Maximum Junction-to-Ambient	DC[2]	$R_{\theta JA}$		59	°C/W

Electrical Characteristics (T_J=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	12			V
I_{SSS}	Zero Gate Voltage Drain Current	V_{SS}=12V, V_{GS}=0V			1	μA
		T_J =55°C			5	μA
I_{GSS}	Gate-Body leakage current	V_{SS}=0V, V_{GS}= ±8V			±10	μA
$V_{GS(th)}$	Gate Threshold Voltage	V_{SS}=V_{GS}, I_{SS}=250μA	0.7	0.9	1.4	V
$R_{SS(ON)}$	Static-Source to Source on-Resistance	V_{GS}=4.5V, I_{SS}=4A	2.9	4.2	5.5	mΩ
		V_{GS}=3.8V, I_{SS}=4A	3.2	4.6	6.1	mΩ
		V_{GS}=3.1V, I_{SS}=4A	3.4	5.4	7.8	mΩ
		V_{GS}=2.5V, I_{SS}=4A	4.4	7.4	13.8	mΩ
g_{FS}	Forward Transconductance	V_{SS}=5V, I_{SS}=20A		60		S
V_{FSS}	Forward Source to Source Voltage	V_{GS}= 4.5V, I_{SS}=1A		0.62	1	V
Dynamic parameters						
R_g	Gate resistance	f=1.0MHz		1085		Ω
C_{iss}	Input Capacitance	V_{GS}=0V V_{SS}= 10V f=100kHz		1996		pF
C_{oss}	Output Capacitance			454		pF
C_{rss}	Reverse Transfer Capacitance			92		pF
Switching Parameters						
Q_g	Total Gate Charge	V_{GS}=4.5V V_{SS}=10V I_{SS}=4A		29		nC
Q_{gs}	Gate Source Charge			3.2		nC
Q_{gd}	Gate Drain Charge			15		nC
$t_{D(on)}$	Turn-On Delay Time	V_{GS}=4.5V V_{DD}=10V R_G=50Ω I_{SS}=8A R_L=1.1Ω		1.8		μs
t_r	Turn-On Rise Time			7.6		μs
$t_{D(off)}$	Turn-Off Delay Time			7.4		μs
t_f	Turn-Off Fall Time			16		μs

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

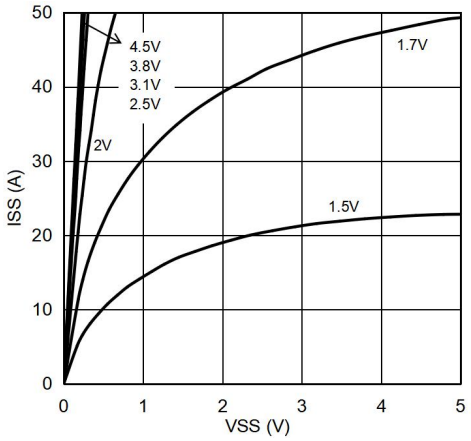


Figure 1: On-Region Characteristics

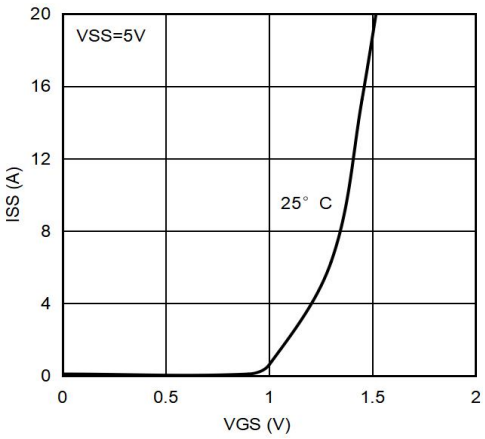


Figure 2: Transfer Characteristics

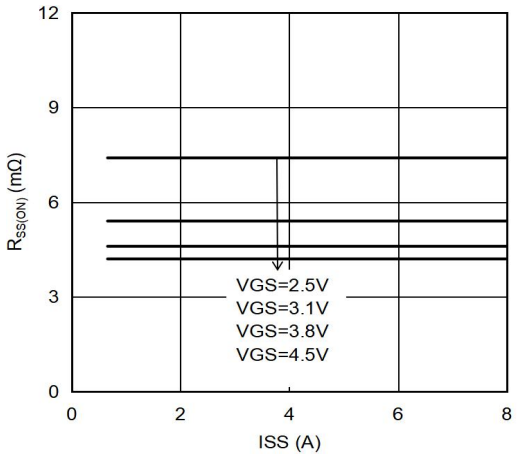


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

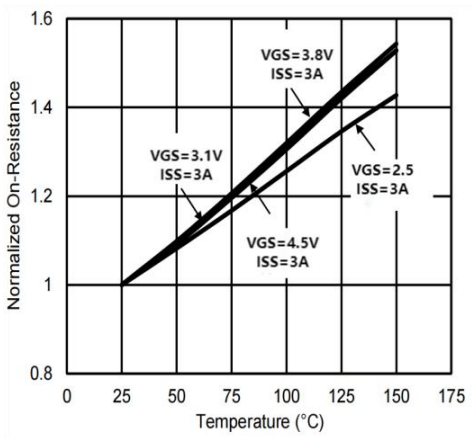


Figure 4: On-Resistance vs. Junction Temperature

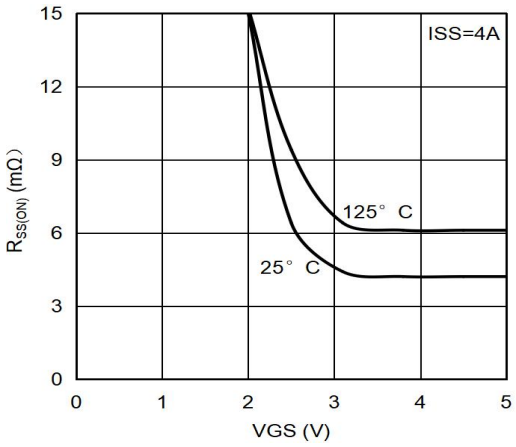


Figure 5: On-Resistance vs. Gate-Source Voltage

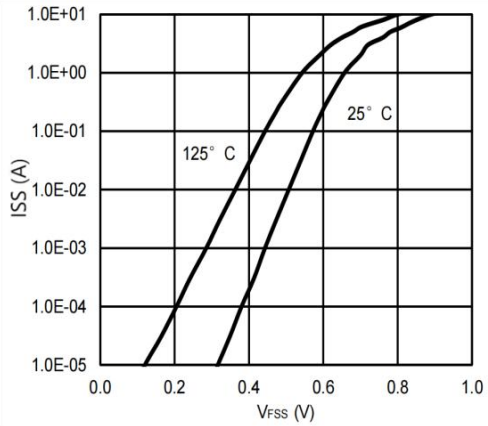


Figure 6: Forward Source to Source Characteristics

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

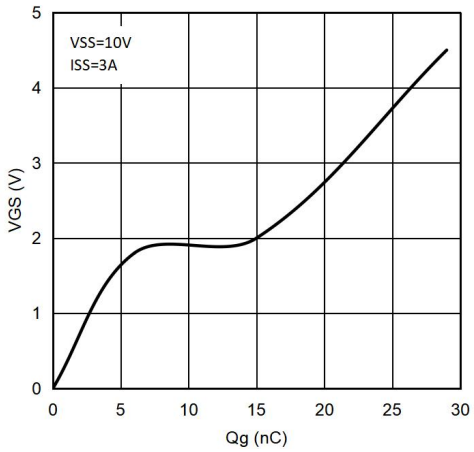


Figure 7: Gate-Charge Characteristics

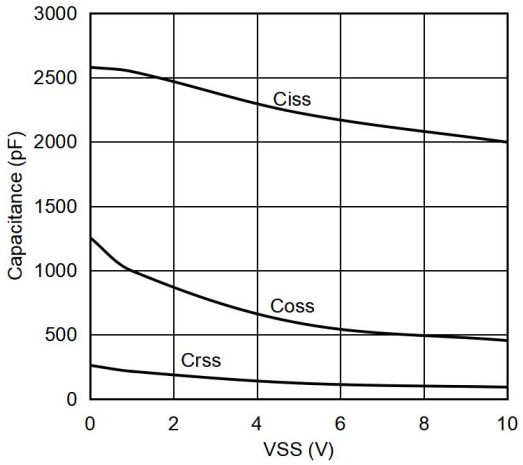
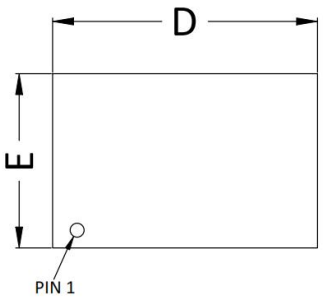
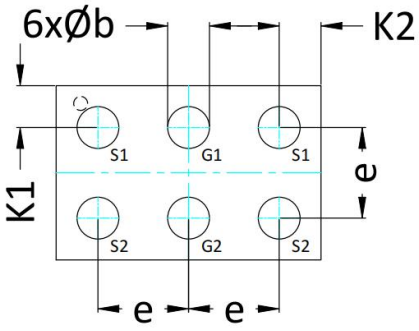


Figure 8: Capacitance Characteristics

WLCSP1.90x1.25-6 Package



TOP VIEW



BOTTOM VIEW

SIDE VIEW

SYMBOLS	DIMENSION IN MM			DIMENSION IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.063	0.093	0.123	0.0025	0.0037	0.0048
b	---	0.300	---	---	0.0118	---
D	1.870	1.900	1.930	0.0736	0.0748	0.0760
E	1.220	1.250	1.280	0.0480	0.0492	0.0504
e	0.650BSC			0.0256BSC		
K1	---	0.300	---	---	0.0118	---
K2	---	0.300	---	---	0.0118	---

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