



Product Summary

$V_{(BR)DSS}$	$R_{DS(ON)} \max$	I_D
-30V	$<12.8m\Omega @ V_{GS}=-10V$	-15A
	$<18.0m\Omega @ V_{GS}=-4.5V$	

Description and Applications

- Trench Power MOSFET technology
- Low $R_{DS(ON)}$
- RoHS and Halogen-Free Complaint
- AC-In Load Switching
- Battery Protection Charge/Discharge
- 100% UIS Tested
- 100% Rg Tested

Ordering Information

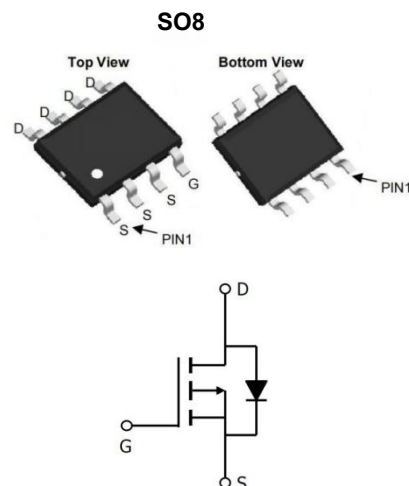
Part Number	Package Type	Package Qty
CFS4407	SO8	3,000/Tape&Reel

Marking Information



Green product

Package & Internal Circuit



Absolute Maximum Rating ($T_{amb}=25^{\circ}C$ unless otherwise noted)

Parameter		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current - Continuous	$T_C=25^{\circ}C$	I_D	-15	A
Pulsed Drain Current		I_{DM}	-60	A
Single Pulse Avalanche Energy	$L=0.2mH$	E_{AS}	104	mJ
Power Dissipation	$T_C=25^{\circ}C$	P_D	3.9	W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^{\circ}C$

Thermal Characteristics

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient	$t \leq 10s$	$R_{\theta JA}$	32	40	$^{\circ}C/W$
Maximum Junction-to-Ambient	Steady-State		60	75	$^{\circ}C/W$

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	I _D =-250μA,V _{GS} =0V	-30			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-30V,V _{GS} =0V			-1	uA
		T _J =55°C			-5	
I _{GSS}	Gate-Body leakage current	V _{DS} =0V,V _{GS} =±20V			±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} ,I _D =-250μA	-1.0	-1.5	-2.0	V
R _{DS(ON)}	Drain-Source on-Resistance	V _{GS} =-10V,I _D = -10A		9.8	12.8	mΩ
		V _{GS} =-4.5V,I _D =-5A		13.7	18.0	mΩ
g _{FS}	Forward Transconductance	V _{DS} =-5V,I _D =-15A		25		S
R _g	Gate resistance	f=1MHz		6.5		Ω
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} =0V V _{DS} =-15V f=1MHz		1936		pF
C _{oss}	Output Capacitance			218		pF
C _{rss}	Reverse Transfer Capacitance			165		pF
Q _g	Total Gate Charge	V _{GS} =-10V V _{DS} =-15V I _D =-12A		32		nC
Q _{gs}	Gate Source Charge			5.9		nC
Q _{gd}	Gate Drain Charge			5.4		nC
t _{D(on)}	Turn-On DelayTime	V _{GS} =-10V V _{DS} =-15V R _L =1.25Ω R _G =3Ω		4.0		ns
t _r	Turn-On Rise Time			14		ns
t _{D(off)}	Turn-Off DelayTime			54		ns
t _f	Turn-Off Fall Time			30		ns
Drain-Source Body Diode Characteristics						
V _{SD}	Body Diode Forward Voltage	I _S =-1A,V _{GS} =0V		-0.84	-1	V
t _{rr}	Body Diode Reverse Recovery Time	I _F =-12A di/dt=200A/μs		23		ns
Q _{rr}	Body Diode Reverse Recovery Charge			13		nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

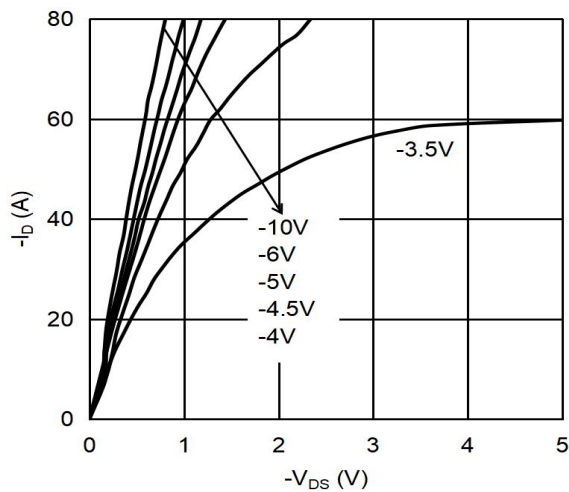


Figure 1: On-Region Characteristics

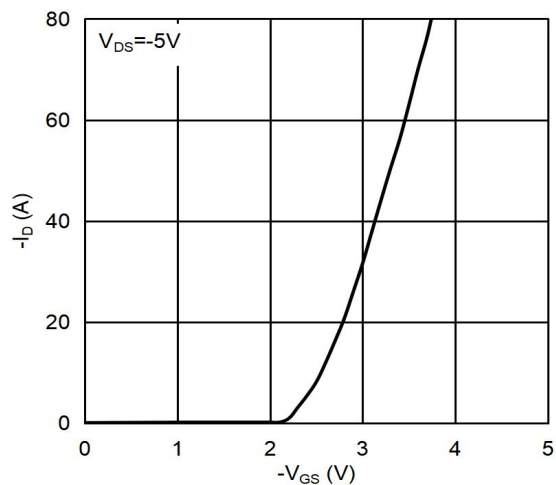


Figure 2: Transfer Characteristics

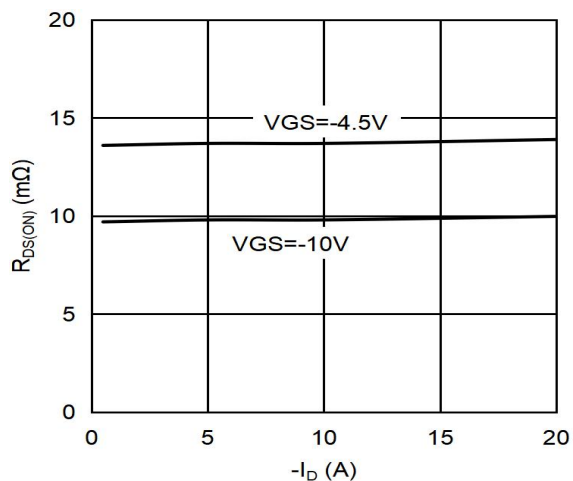


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

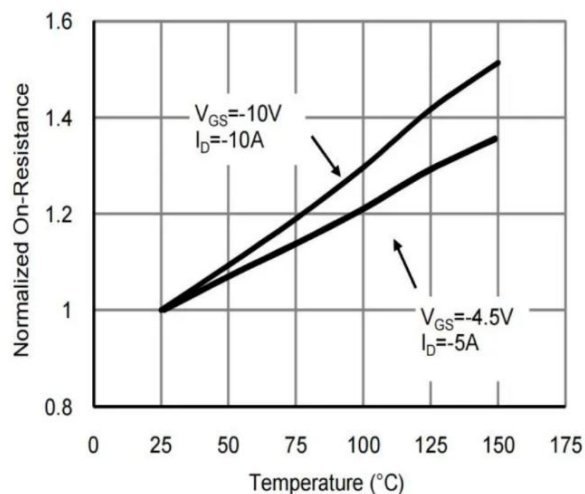


Figure 4: On-Resistance vs. Junction Temperature

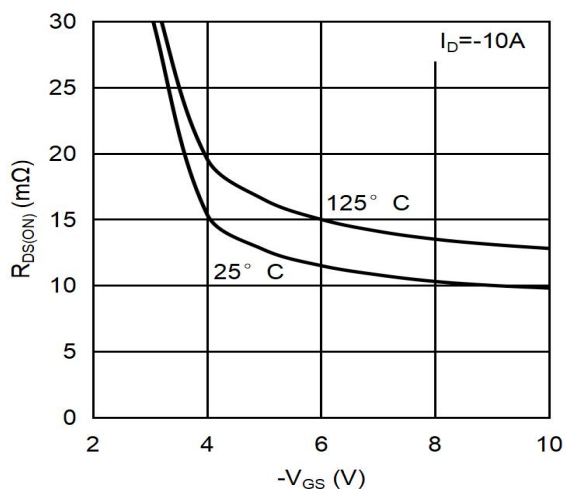


Figure 5: On-Resistance vs. Gate-Source Voltage

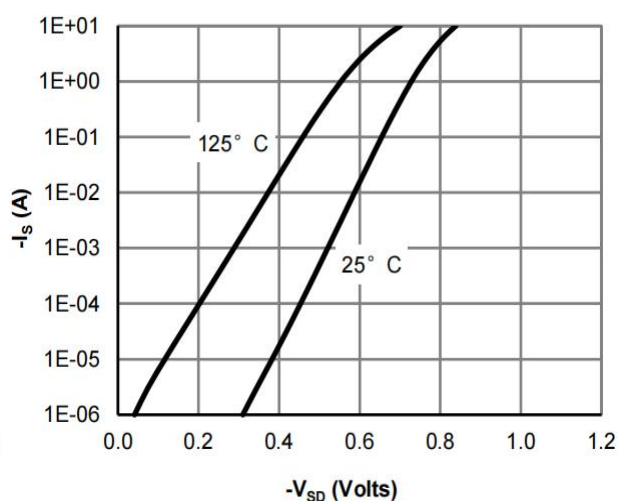
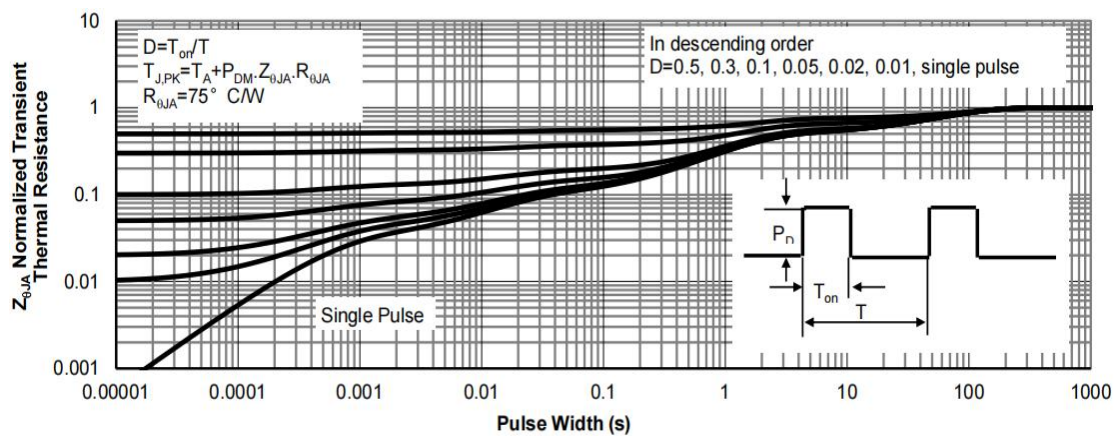
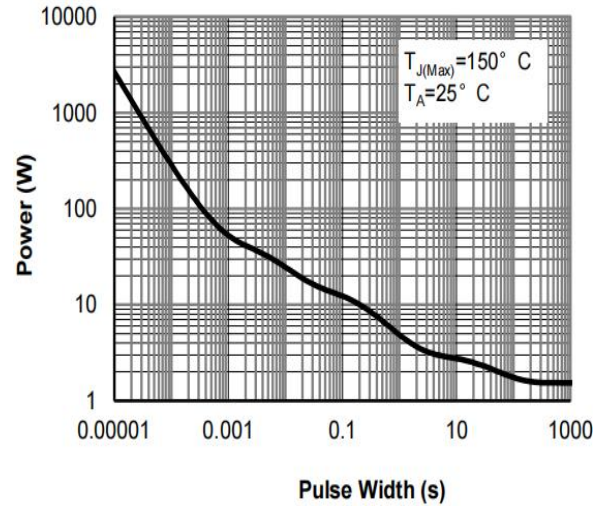
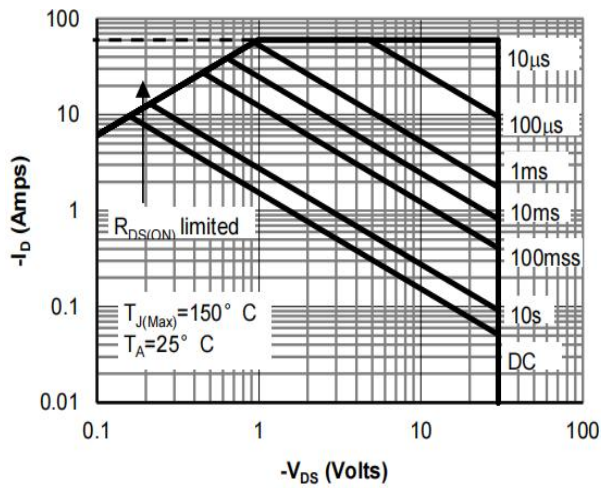
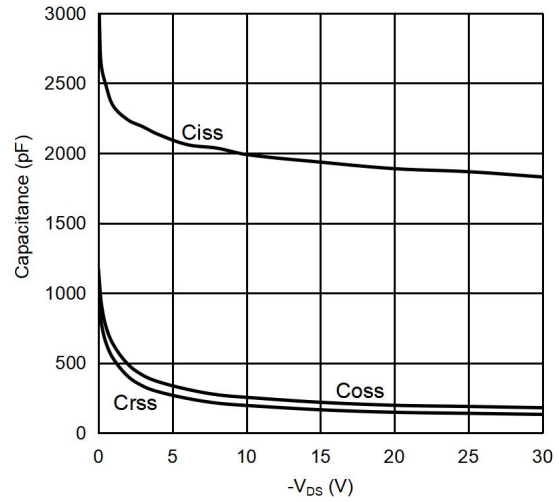
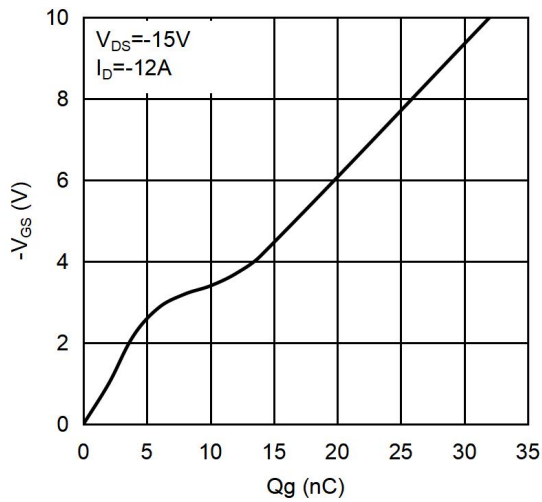
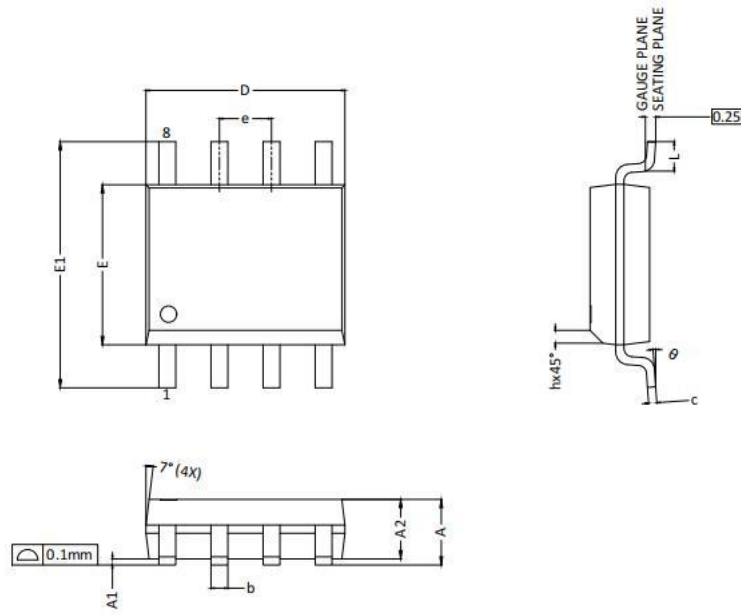


Figure 6: Body-Diode Characteristics

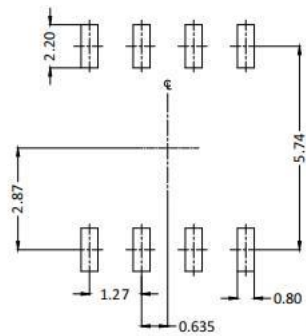
TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS



SO8 Package



RECOMMENDED LAND PATTERN



UNIT: mm

SYMBOLS	DIMENSION IN MM			DIMENSION IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.35	1.65	1.75	0.053	0.065	0.069
A1	0.10	0.15	0.25	0.004	0.006	0.010
A2	1.25	1.50	1.65	0.049	0.059	0.065
b	0.31	0.41	0.51	0.012	0.016	0.020
c	0.17	0.20	0.25	0.007	0.008	0.010
D	4.80	4.90	5.00	0.189	0.193	0.197
E	3.80	3.90	4.00	0.150	0.154	0.157
E1	5.80	6.00	6.20	0.228	0.236	0.244
e	1.27 BSC			0.050 BSC		
h	0.25	0.30	0.50	0.010	0.012	0.020
L	0.40	0.69	1.27	0.016	0.027	0.050
θ	0°	4°	8°	0°	4°	8°

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