Dual P-Channel 30V(D-S) MOSFET

Product summary		
V_{DS}	-30	V
$R_{DS(ON)}$(at V_{GS}=-10V) Typ.	18.5	mΩ
$R_{DS(ON)}$(at V_{GS}=-4.5V) Typ.	24.5	mΩ
I_D(TA=25℃)	-10	A

Features

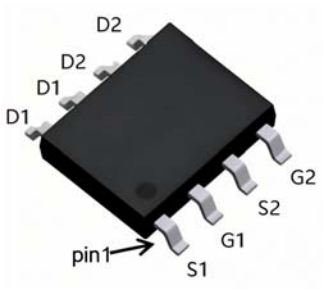
- High density cell design for low Rds(on)
- Trench Power LV MOSFET technology
- RoHS and Halogen-Free compliant

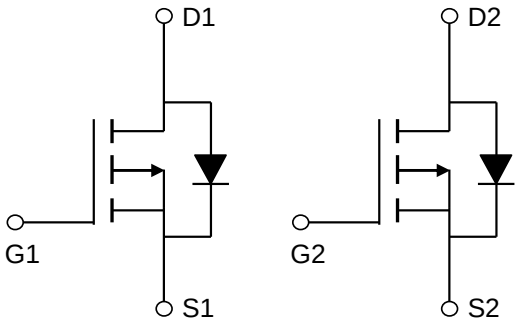
Applications

- Load switching
- Battery protection
- Uninterruptible power supply

Pin Configuration

SOP8





Packing Information

Device	Package	Reel Size	Quantity(Min. Package)
ECS7328A	SOP8	13″	4000pcs

Absolute Maximum Ratings (at TA=25℃ Unless Otherwise Noted)

Symbol	Parameter		Rating	Units
V_{DS}	Drain-Source Voltage		-30	V
V_{GS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current [A]	T_A=25℃	-10	A
		T_A=70℃	-8	A
I_{DM}	Pulse Drain Current Tested [B]		-50	A
P_D	Power Dissipation [A]	T_C=25℃	2.8	W
T_J,T_{STG}	Junciton and Storage Temperature Range		-55 to 150	℃

Thermal Characteristics

Symbol	Parameter	Typical	Units
$R_{\theta JA}$	Thermal Resistance-Junction to ambient [A]	45	℃/W

Electrical Characteristics (at TJ =25℃ Unless Otherwise Noted)

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
Static Parameters						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=-250uA	-30	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=30V,V_{GS}=0V	--	--	-1	uA
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=-250uA	-1.0	-1.5	-2.5	V
$R_{DS(ON)}$	Drain-Source On-State Resistance [B]	V_{GS}=-10V,I_D=-10A	--	18.5	23	mΩ
		V_{GS}=-4.5V,I_D=-5A	--	24.5	34	mΩ
V_{SD}	Forward Voltage	I_{SD}=-10A,V_{GS}=0V	--	-0.8	-1.2	V
Dynamic Parameters [C]						
C_{iss}	Input Capacitance	V_{GS}=0V,V_{DS}=-15V f=1MHZ	--	1492	--	pF
C_{oss}	Output Capacitance		--	178	--	pF
C_{rss}	Reverse Transfer Capacitance		--	146	--	pF
Q_g	Total Gate Charge	V_{DS}=-15V,I_D=-6A V_{GS}=-10V	--	29	--	nC
Q_{gs}	Gate-Source Charge		--	5.5	--	nC
Q_{gd}	Gate-Drain Charge		--	5.4	--	nC
Switching Parameters						
$t_{D(on)}$	Turn-on Delay Time	V_{DD}=-15V,I_D=-6A R_G=2.5Ω,V_{GS}=-10V	--	10	--	nS
t_r	Turn-on Rise Time		--	44	--	nS
$t_{D(off)}$	Turn-off Delay Time		--	54	--	nS
t_f	Turn-off Fall Time		--	59	--	nS

A. The data tested by surface mounted on a 1 inch x 1 inch FR-4 board with 2OZ copper.

B. Pulse Test: Pulse Width≤300us,Duty cycle ≤2%.

C. Guaranteed by design, not subject to production testing.

Typical Characteristics

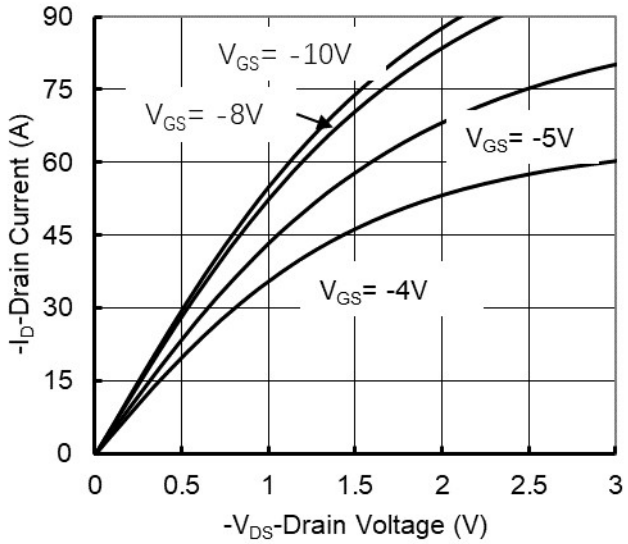


Figure 1. Output Characteristics

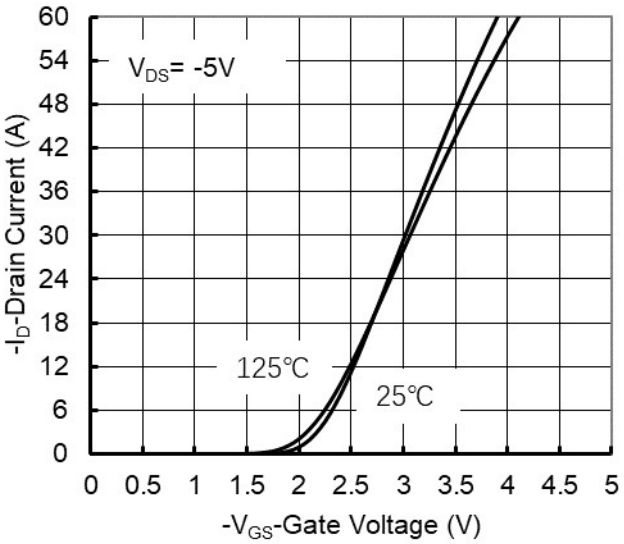


Figure 2. Transfer Characteristics

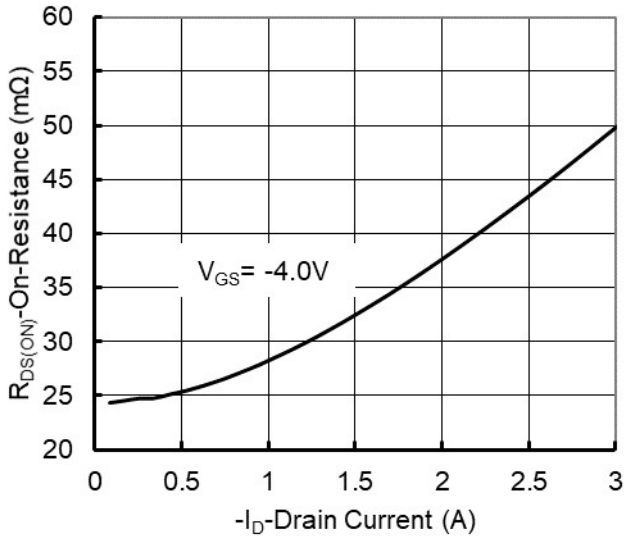


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

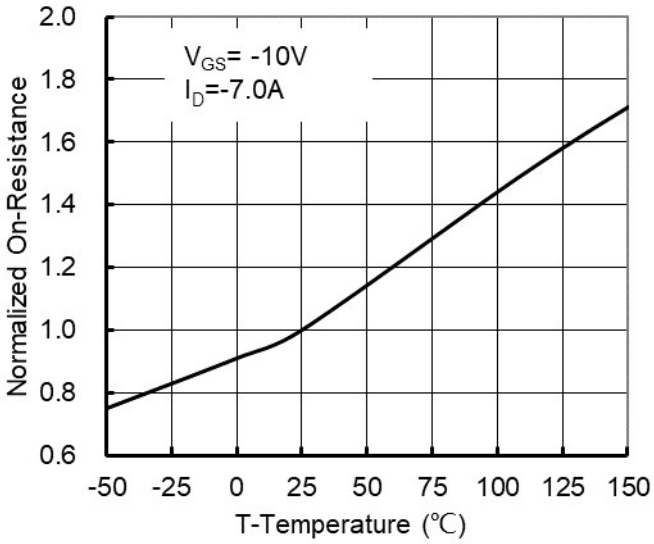


Figure 4. On-Resistance vs. Junction Temperature

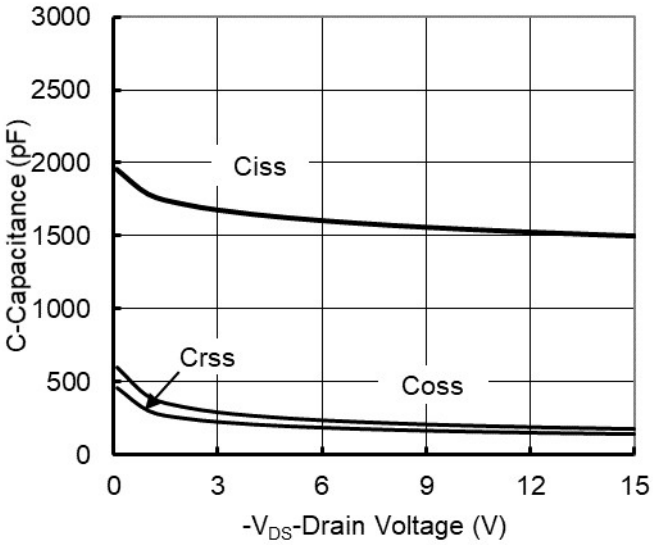


Figure 5. Capacitance Characteristics

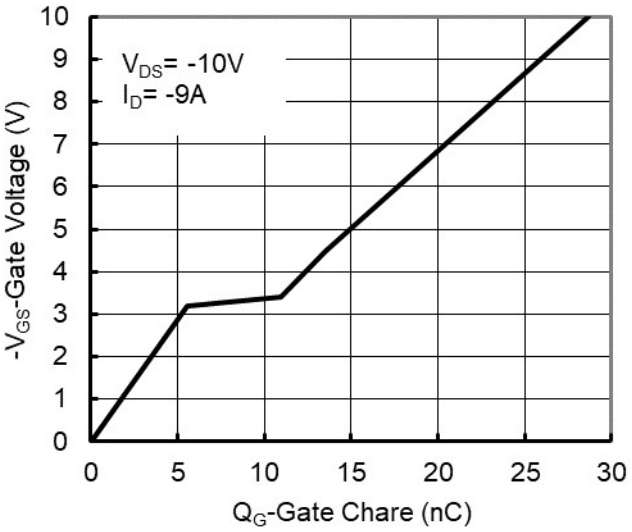


Figure 6. Gate Charge

Typical Characteristics

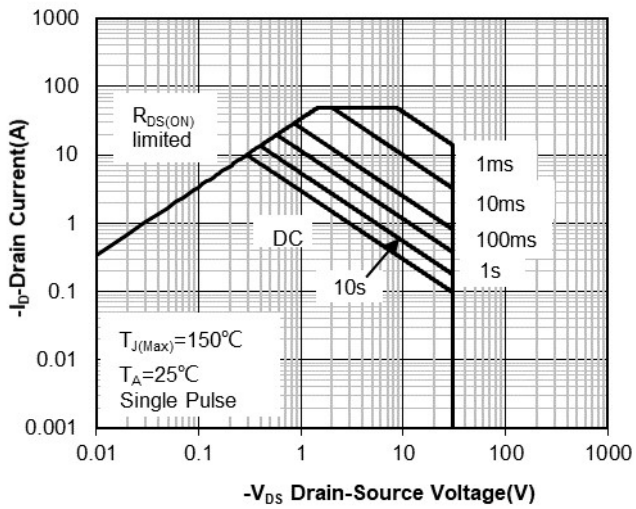


Figure 7. Safe Operation Area

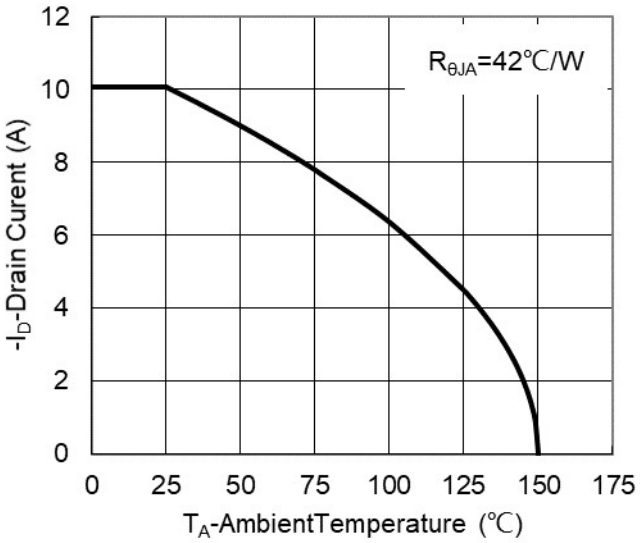


Figure 8. Maximum Continuous Drain Current vs Ambient Temperature

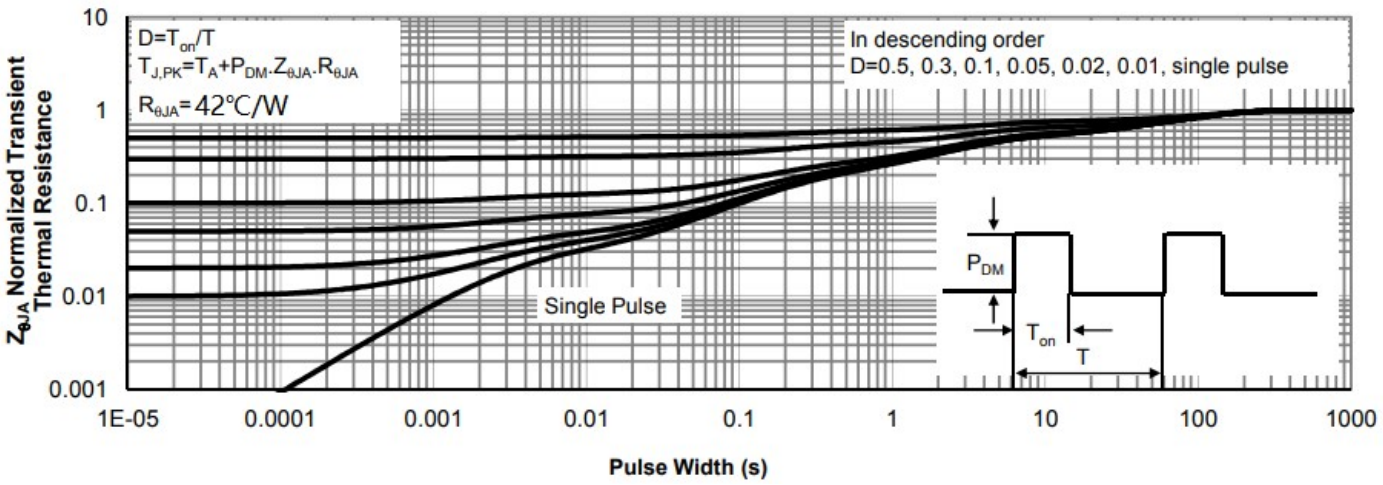
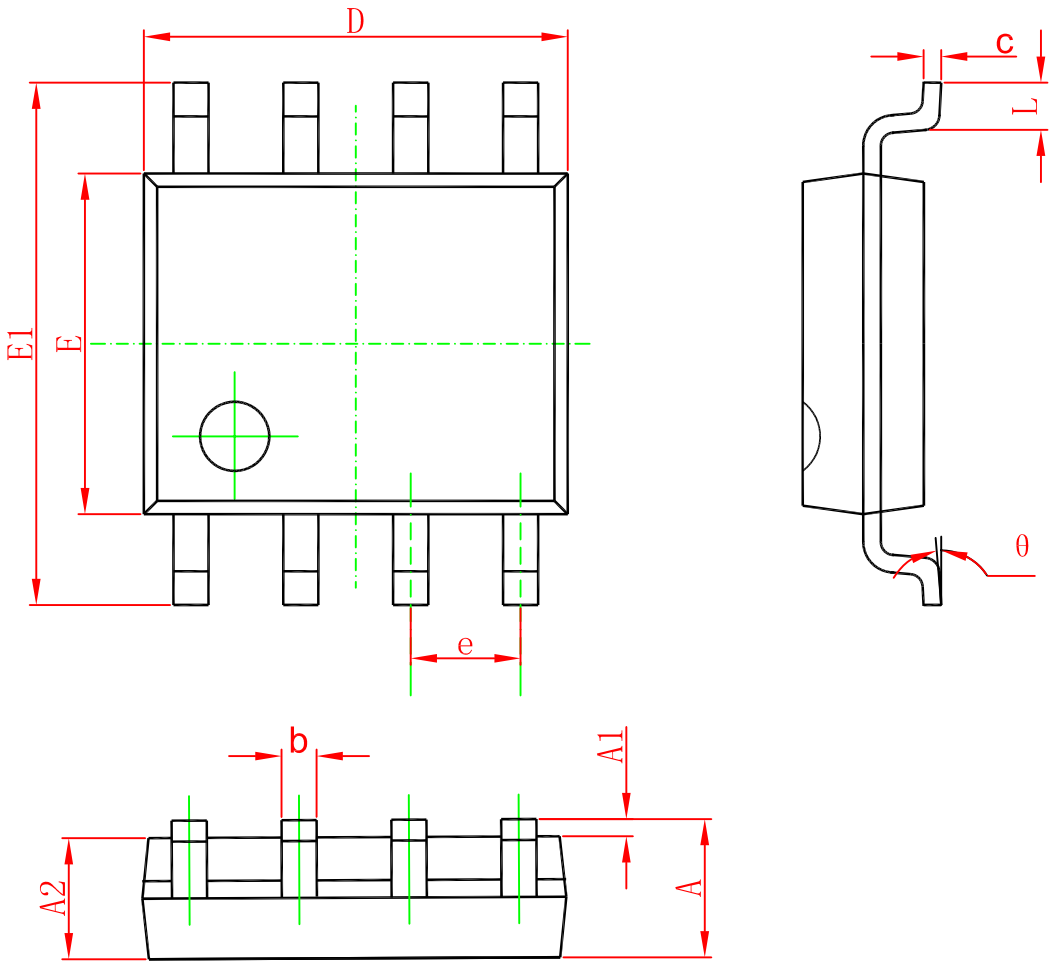


Figure 9. Normalized Maximum Transient Thermal Impedance

SOP8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°