

Dual P-Channel 20V(D-S) MOSFET

Product summary		
V_{DS}	-20	V
$R_{DS(ON)}$ (at $V_{GS}=-4.5V$) Typ.	49	m Ω
$R_{DS(ON)}$ (at $V_{GS}=-2.5V$) Typ.	59	m Ω
I_D ($T_A=25^\circ C$)	-3.7	A

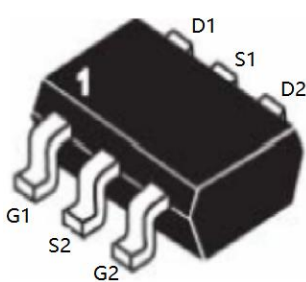
Features

- Trench Power LV MOSFET technology
- Low $R_{DS(ON)}$
- Low Gate Charge

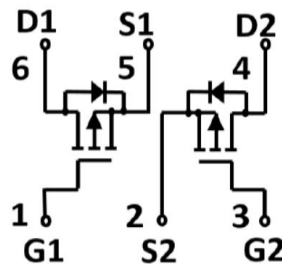
Applications

- Load switch
- Power management

Pin Configuration



SOT23-6L



Packing Information

Device	Marking	Reel Size	Quantity(Min. Package)
ECDE2301A	.S1	7"	3000pcs

Absolute Maximum Ratings (at $T_A=25^\circ C$ Unless Otherwise Noted)

Symbol	Parameter	Rating	Units	
V_{DS}	Drain-Source Voltage	-20	V	
V_{GS}	Gate-Source Voltage	± 10	V	
I_D	Continuous Drain Current at $V_{GS}=10V$	$T_A=25^\circ C$	-3.7	A
		$T_A=70^\circ C$	-3	A
I_{DM}	Pulse Drain Current Tested ^A	-16	A	
P_D	Power Dissipation	$T_A=25^\circ C$	1.3	W
T_J, T_{STG}	Junction and Storage Temperature Range	-55 to +150	$^\circ C$	

Thermal Characteristics

Symbol	Parameter	Typical	Units
$R_{\theta JA}$	Thermal Resistance-Junction to ambient ^B	96	$^\circ C/W$

Electrical Characteristics (at $T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
Static Parameters						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-20	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-20V, V_{GS}=0V$	--	--	-1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 10V$	--	--	± 100	nA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.6	-1.0	V
$R_{DS(on)}$	Drain-Source On-State Resistance	$V_{GS}=-4.5V, I_D=-3.4A$	--	49	64	m Ω
		$V_{GS}=-2.5V, I_D=-3A$	--	59	80	m Ω
		$V_{GS}=-1.8V, I_D=-2.5A$	--	79	110	m Ω
V_{SD}	Forward Voltage	$I_{SD}=-3.7A, V_{GS}=0V$	--	--	-1.2	V
Dynamic Parameters						
C_{iss}	Input Capacitance	$V_{GS}=0V, V_{DS}=-10V$ $f=1MHz$	--	550	--	pF
C_{oss}	Output Capacitance		--	87	--	pF
C_{rss}	Reverse Transfer Capacitance		--	61	--	pF
Switching Parameters						
Q_g	Total Gate Charge	$V_{DS}=-10V, I_D=-3.7A$ $V_{GS}=-4.5V$	--	4.4	--	nC
Q_{gs}	Gate-Source Charge		--	0.8	--	nC
Q_{gd}	Gate-Drain Charge		--	1.1	--	nC
$t_{D(on)}$	Turn-on Delay Time	$V_{DD}=-10V$ $I_D=-1A, R_{GEN}=2.5\Omega,$ $V_{GS}=-4.5V$	--	12	--	nS
t_r	Turn-on Rise Time		--	53	--	nS
$t_{D(off)}$	Turn-off Delay Time		--	15	--	nS
t_f	Turn-off Fall Time		--	9	--	nS

A. Pulse Test: Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Typical Characteristics

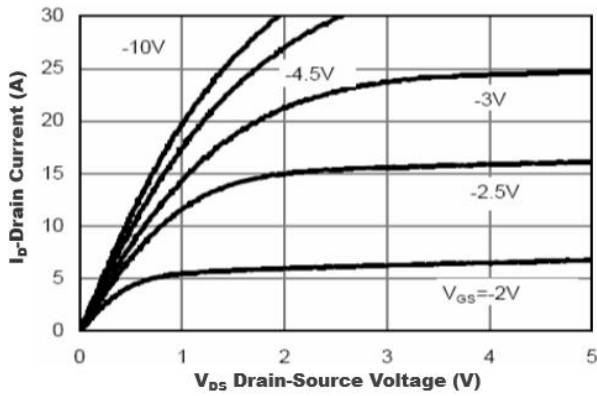


Figure1. Output Characteristics

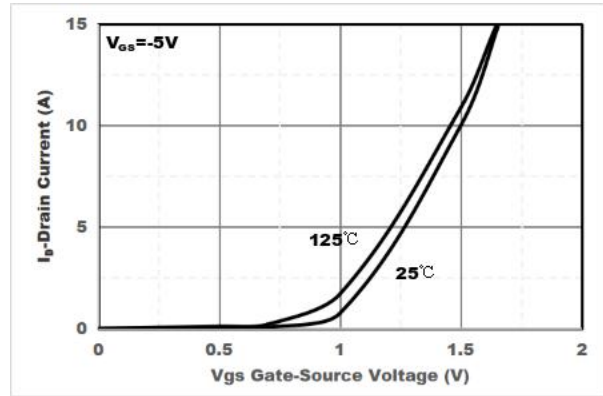


Figure2. Transfer Characteristics

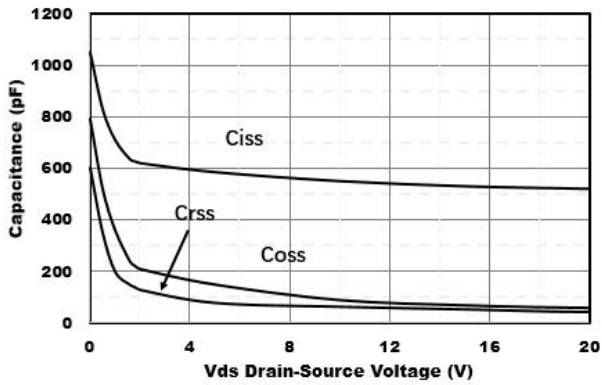


Figure3. Capacitance Characteristics

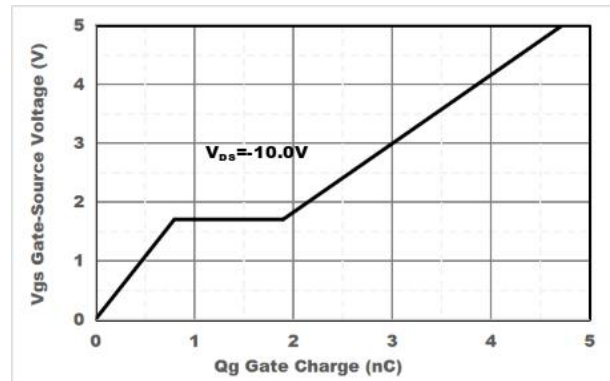


Figure4. Gate Charge

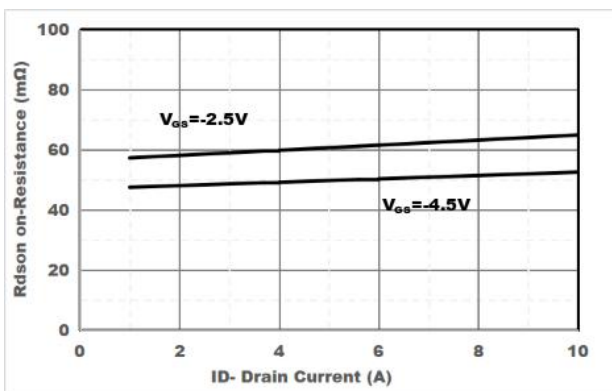


Figure5. Drain-Source on Resistance

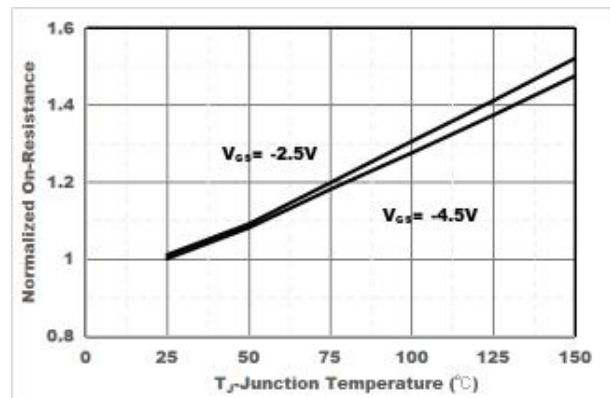


Figure6. Drain-Source on Resistance

Typical Characteristics

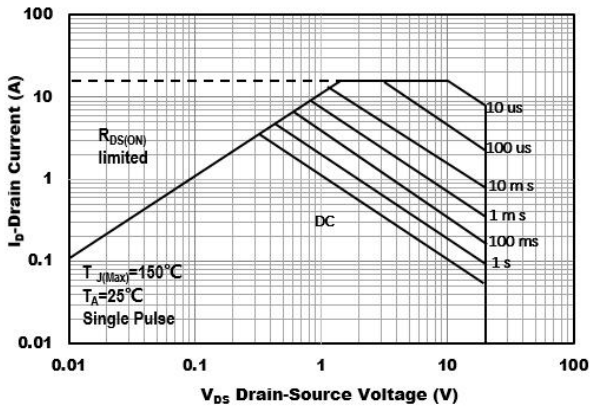


Figure7. Safe Operation Area

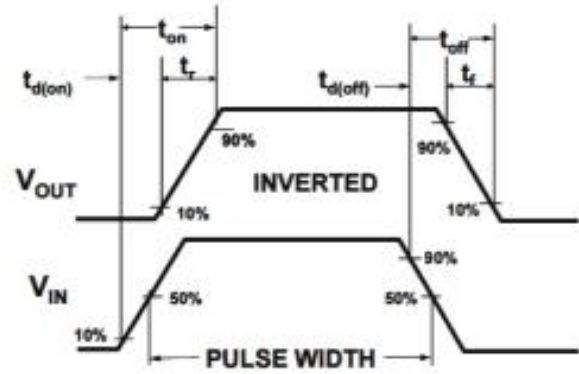
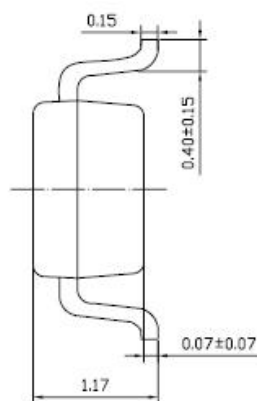
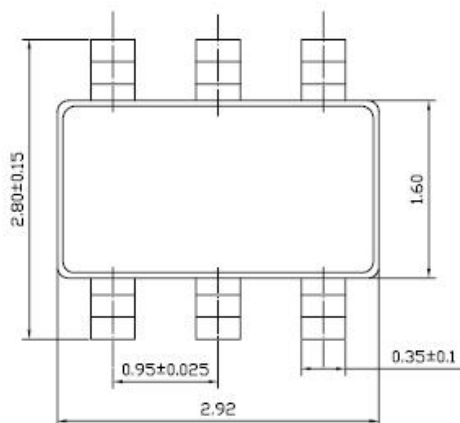


Figure8. Switching wave

SOT23-6L Package Information



技术要求:

- 1.树脂体不应有崩裂、缺损等缺陷;
- 2.未注公差: ± 0.050 ;
- 3.树脂上下部X、Y方向偏差不得超过0.08MAX;
- 4.胶体两端留废胶总和宽度不超过0.30;
- 5.所有单位为mm;