



DESCRIPTION

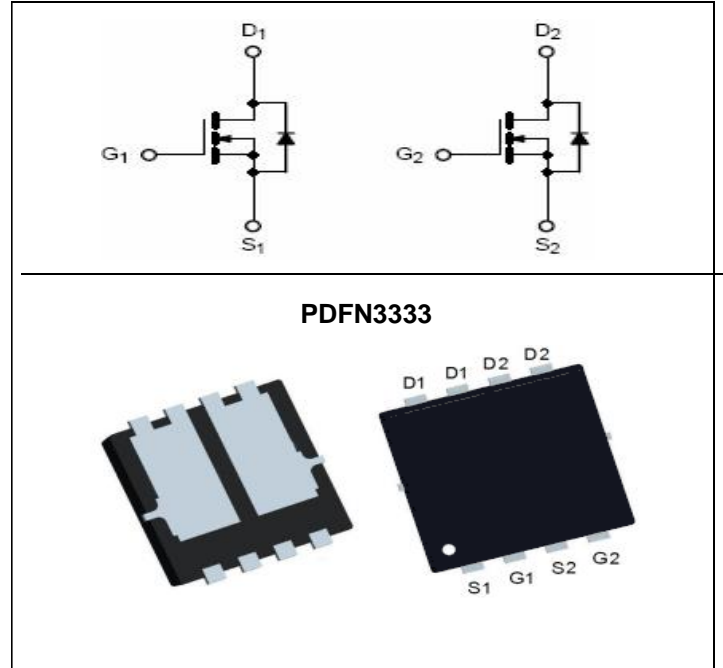
The CX3622DE uses advanced trench technology to provide excellent RDS(ON) and low gate charge. This device is suitable for use as a load switch or in PWM applications.

GENERAL FEATURES

- RDS(ON) <10 mΩ @ VGS=10V
RDS(ON) <13mΩ @ VGS=4.5V
- High Power and current handling capability
- Lead free product is acquired
- Surface Mount Package

Application

- PWM applications
- Load switch
- Power management



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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V _{DS}	30	V
Gate-source Voltage		V _{GS}	±20	V
Drain Current	T _c =25°C	I _D	35	A
	T _c =100°C		22	
Pulsed Drain Current ^A		I _{DM}	140	A
Total Power Dissipation	T _c =25°C	P _D	20	W
	T _c =100°C		15	W
Single Pulse Avalanche Energy ^B		E _{AS}	16	mJ
Thermal Resistance Junction-to-Case ^C		R _{θJC}	45	°C/W
Junction and Storage Temperature Range		T _J , T _{STG}	-55~+155	°C



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N+N-channel Enhancement Mode Mosfet

CX3622DE

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	$T_J=25^{\circ}\text{C}$		1	μA
			$T_J=55^{\circ}\text{C}$		5	
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.5	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=15A$		8.0	10	m Ω
		$V_{GS}=4.5V, I_D=15A$		10	13	
Diode Forward Voltage	V_{SD}	$I_S=15A, V_{GS}=0V$		0.85	1.2	V
Maximum Body-Diode Continuous Current	I_S				30	A
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1\text{MHz}$		1020		μF
Output Capacitance	C_{oss}			225		
Reverse Transfer Capacitance	C_{rss}			126		
Switching Parameters						
Total Gate Charge	Q_g	$V_{GS}=10V, V_{DS}=15V, I_D=30A$		28		nC
Gate-Source Charge	Q_{gs}			7		
Gate-Drain Charge	Q_{gd}			5		
Reverse Recovery Charge	Q_{rr}	$I_F=15A, di/dt=100A/\mu s$		25		nC
Reverse Recovery Time	t_{rr}			26		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=20V, I_D=2A, R_L=1\Omega, R_{GEN}=3\Omega$		8		ns
Turn-on Rise Time	t_{tr}			15		
Turn-off Delay Time	$t_{D(off)}$			27		
Turn-off fall Time	t_{tf}			7		

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

B. $T_J=25^{\circ}\text{C}$, $V_{DD}=20V$, $V_G=10V$, $L=0.5\text{mH}$, $R_g=25\Omega$

C. $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case thermal reference is defined as the solder mounting surface of the drain pins. $R_{\theta JC}$ is guaranteed by design, while $R_{\theta JA}$ is determined by the board design. The maximum rating present here is based on mounting on a 1 in 2 pad of 2oz copper.



Typical Performance Characteristics

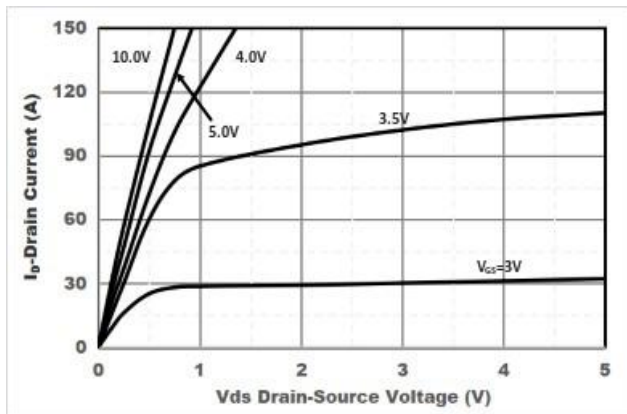


Figure1. Output Characteristics

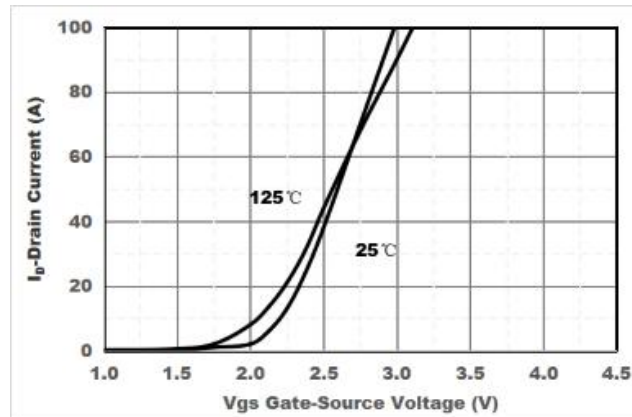


Figure2. Transfer Characteristics

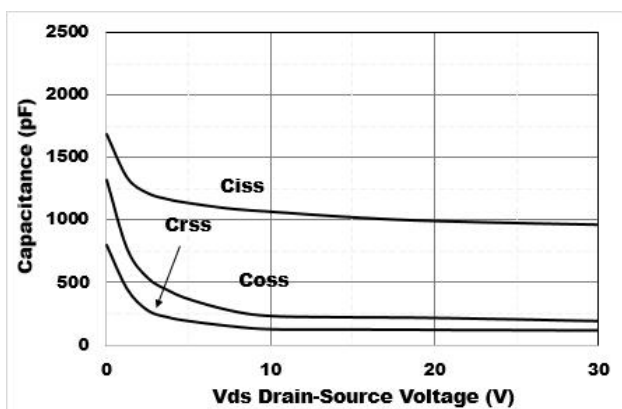


Figure3. Capacitance Characteristics

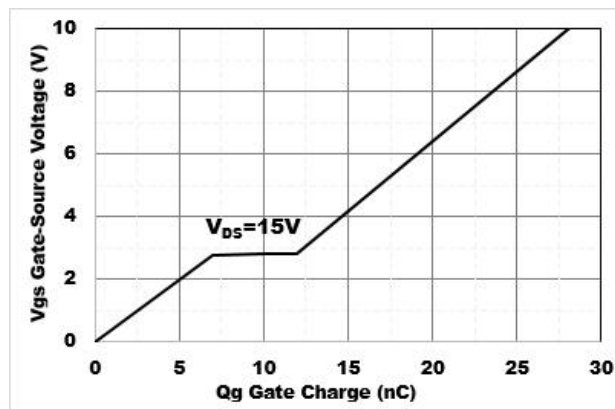


Figure4. Gate Charge

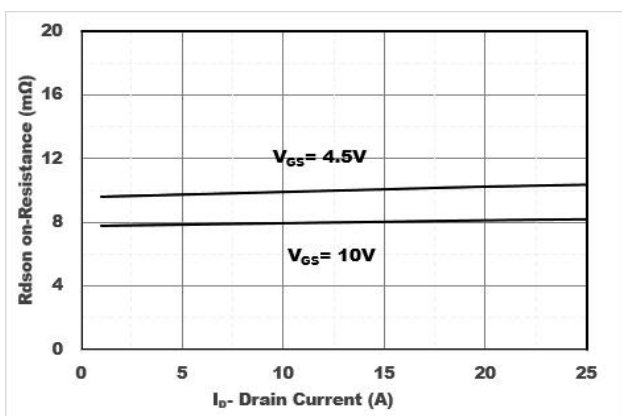


Figure5. Drain-Source on Resistance

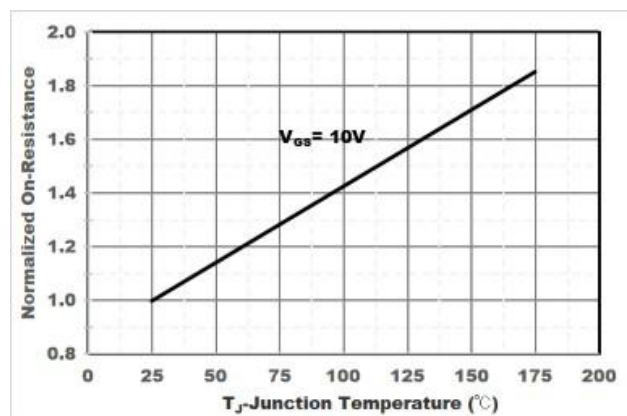


Figure6. Drain-Source on Resistance

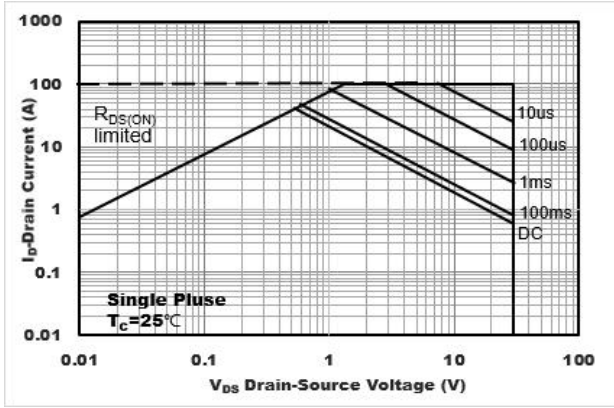


Figure7. Safe Operation Area

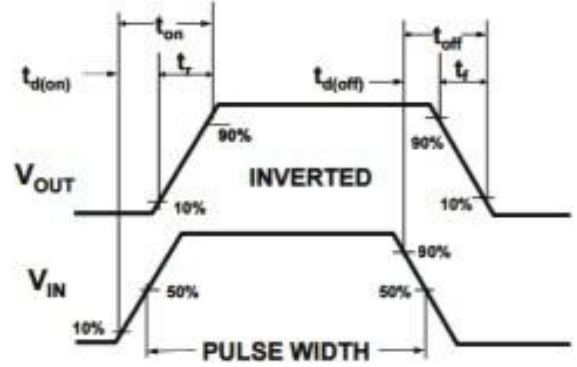
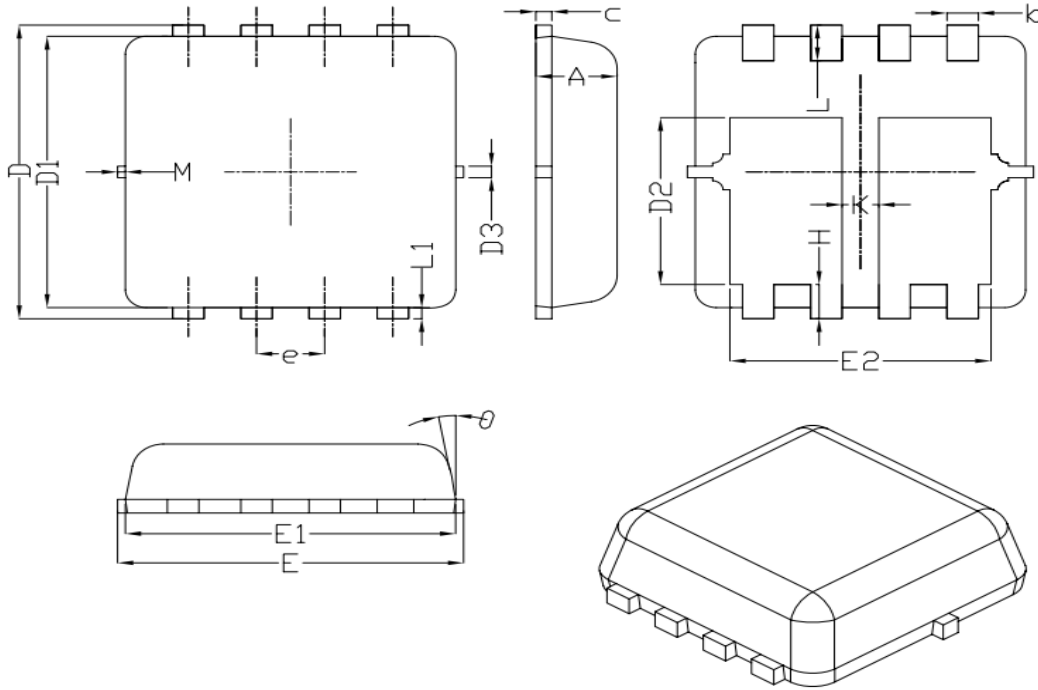


Figure8. Switching wave



Package Information



Symbol	Dimensions (unit: mm)		
	Min	Typ	Max
A	0.70	0.75	0.80
b	0.25	0.30	0.35
c	0.10	0.15	0.25
D	3.25	3.35	3.45
D1	3.00	3.10	3.20
D2	1.78	1.88	1.98
D3	--	0.13	--
E	3.20	3.30	3.40
E1	3.00	3.15	3.20
E2	2.39	2.49	2.59
e	0.65 BSC		
H	0.30	0.39	0.50
L	0.30	0.40	0.50
L1	--	0.13	--
K	0.30	--	--
θ	--	10°	12°
M	*	*	0.15
* Not Specified			