

Description

Features

- Trench LV MOSFET technology
- Fast switching
- Improved dv/dt capability

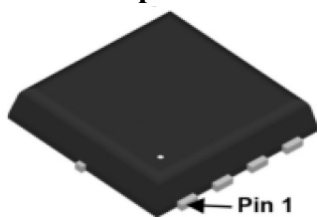
Application

- Load Switch
- PWM Application
- Battery Management

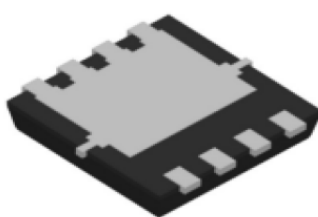
V_{DS}	30	V
$R_{ds(on),typ}@V_{gs}=10V$	2.9	mΩ
$R_{ds(on),typ}@V_{gs}=4.5V$	4.5	mΩ
I_D	110	A



Top View

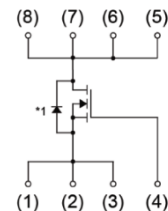


Bottom View



PDFN5*6 Pin Configuration

- (1) Source
 - (2) Source
 - (3) Source
 - (4) Gate
 - (5) Drain
 - (6) Drain
 - (7) Drain
 - (8) Drain
- *1 Body Diode



Package Marking and Ordering Information

Part	Marking	Package	Packing	Reel Size	Tape Width	Qty
CMT30H11M	T30H11M	PDFN5*6	Reel	NA	NA	5000pcs

Key Performance Parameters

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
$I_{D@Tc=25^{\circ}C}$	Continuous Drain Current, $V_{GS}=10V$	110	A
$I_{D@Tc=100^{\circ}C}$	Continuous Drain Current, $V_{GS}=10V$	45	A
IDM	Pulsed Drain Current ¹	430	A
EAS	Single Pulse Avalanche Energy ⁴	140	mJ
$PD@Tc=25^{\circ}C$	Total Power Dissipation	58	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_j	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ	Max	Units
R _{θJA}	Thermal Resistance Junction-Ambient	38	42	°C/W
R _{θJC}	Thermal Resistance Junction-Case	1.95	2.14	°C/W

Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
BVDSS	Drain-Source Breakdown Voltage	30	--	--	V	VGS=0V, ID=250uA
RDS(ON)	Static Drain-Source On-Resistance	--	2.9	4	mΩ	VGS=10V, ID=20A
		--	4.5	5.5		VGS=4.5V, ID=10A
VGS(th)	Gate Threshold Voltage	1.0	1.6	2.2	V	VGS=VDS, ID=250uA
IDSS	Drain-Source Leakage Current	--	--	1	uA	VDS=30V, VGS=0V, TJ=25°C
		--	--	10	uA	VDS=30V, VGS=0V, TJ=125°C
IGSS	Gate-Source Leakage Current	--	--	±100	nA	VGS=±20V, VDS=0V
Rg	Gate Resistance	--	2.5	--	Ω	VDS=0V, VGS=0V, f=1MHz
Qg	Total Gate Charge (10V) ^{2,3}	--	40	--	nC	VDS=15V, VGS=10V, ID=30A
Qgs	Gate-Source Charge ^{2,3}	--	5.6	--		
Qgd	Gate-Drain Charge ^{2,3}	--	9.8	--		
Td(on)	Turn-On Delay Time ^{2,3}	--	22	--	ns	VDD=15V, VGS=10V, RG=3Ω ID=30A
Tr	Rise Time ^{2,3}	--	24	--		
Td(off)	Turn-Off Delay Time ^{2,3}	--	75	--		
Tf	Fall Time ^{2,3}	--	34	--	pF	VDS=15V, VGS=0V, f=1MHz
Ciss	Input Capacitance	--	3098	--		
Coss	Output Capacitance	--	358	--		
Crss	Reverse Transfer Capacitance	--	289	--		

Diode Characteristics

Symbol	Parameter	Conditions	Typ	Max	Units
Is	Continuous Source Current	VG=VD=0V, Force Current	--	110	A
Ism	Pulsed Source Current		--	430	A
VSD	Diode Forward Voltage	VGS=0V, Is=1A, TJ=25°C	--	1.1	V

Note:

1. Repetitive Rating: Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed, pulse width ≤ 300us, duty cycle ≤ 2%.
3. Essentially independent of operating temperature.
4. The EAS data shows Max. rating. The test condition is VDD=20V, VGS=10V, L=0.5mH.

Typical Performance Characteristics

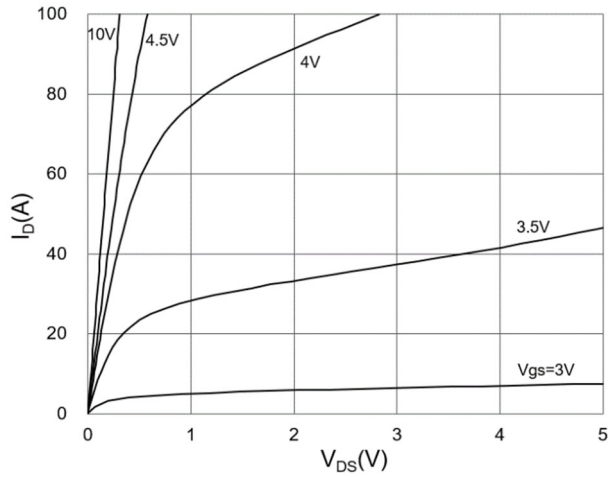
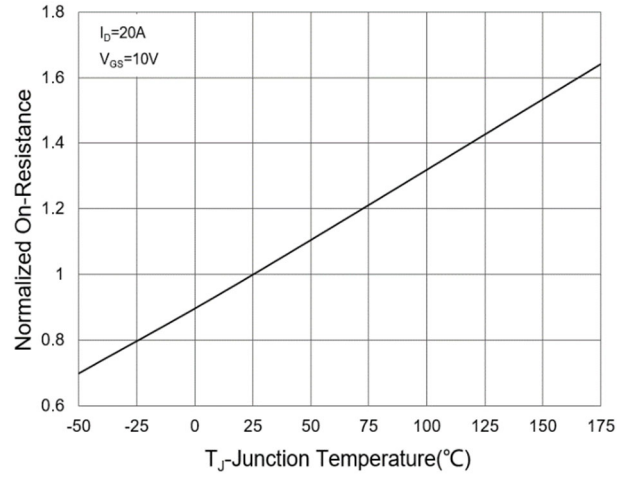
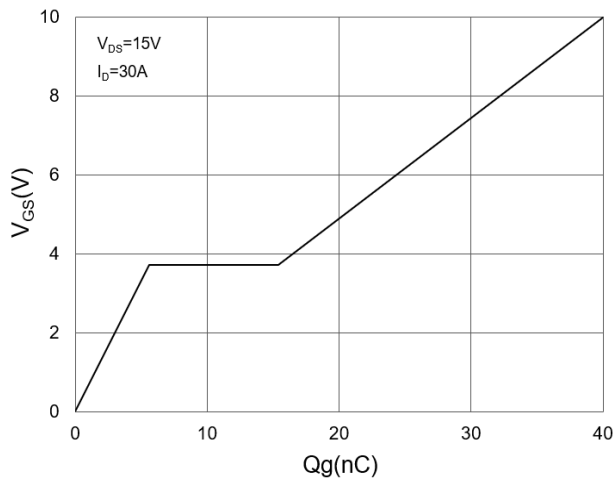
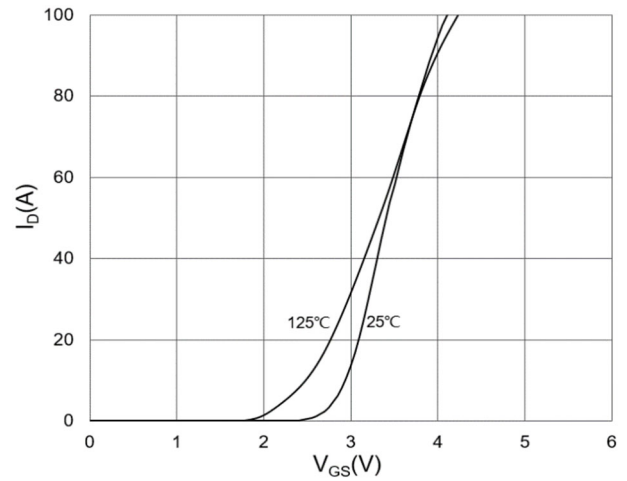
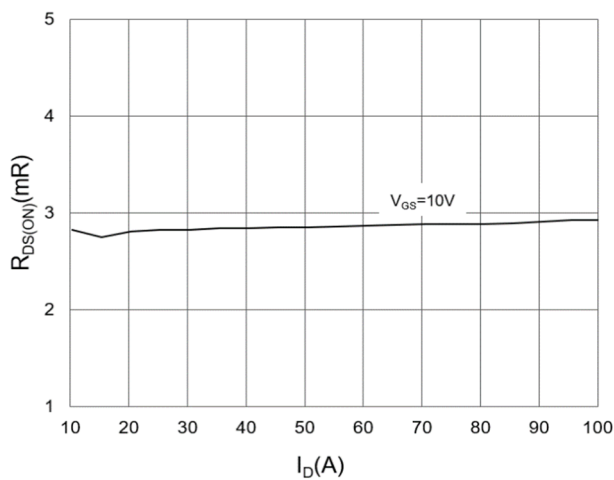
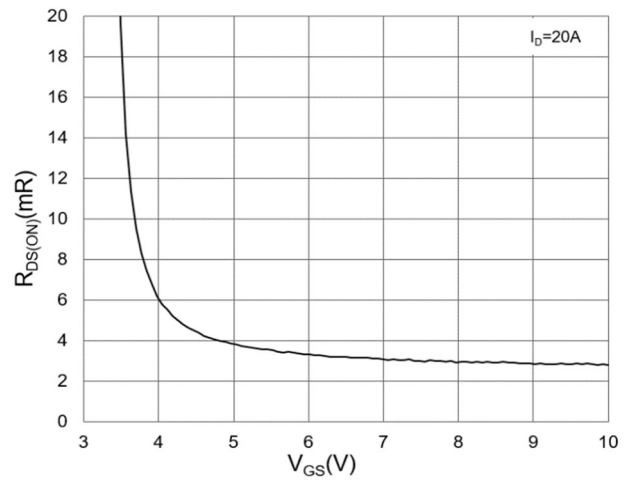
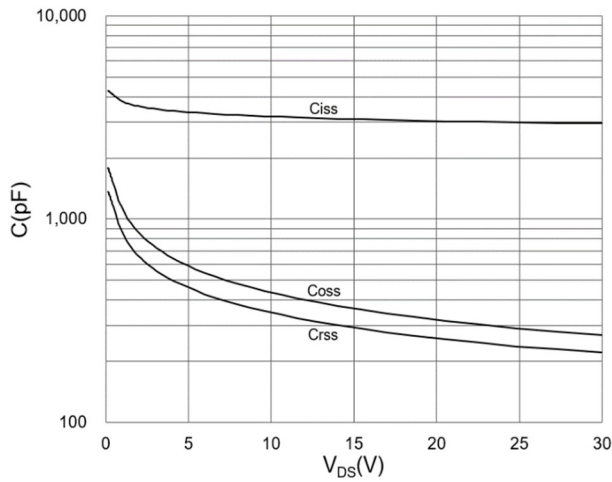
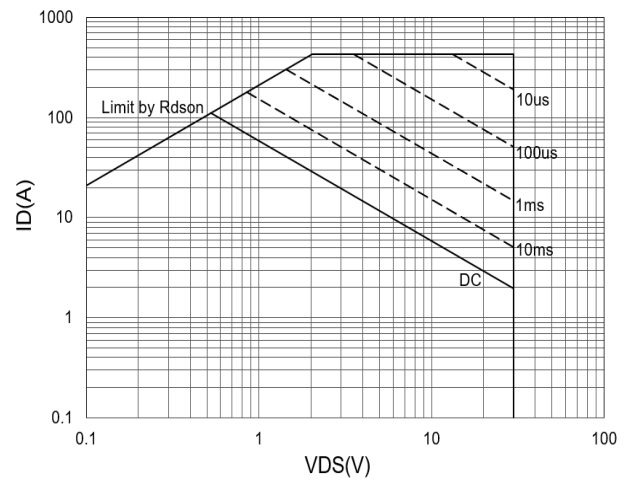
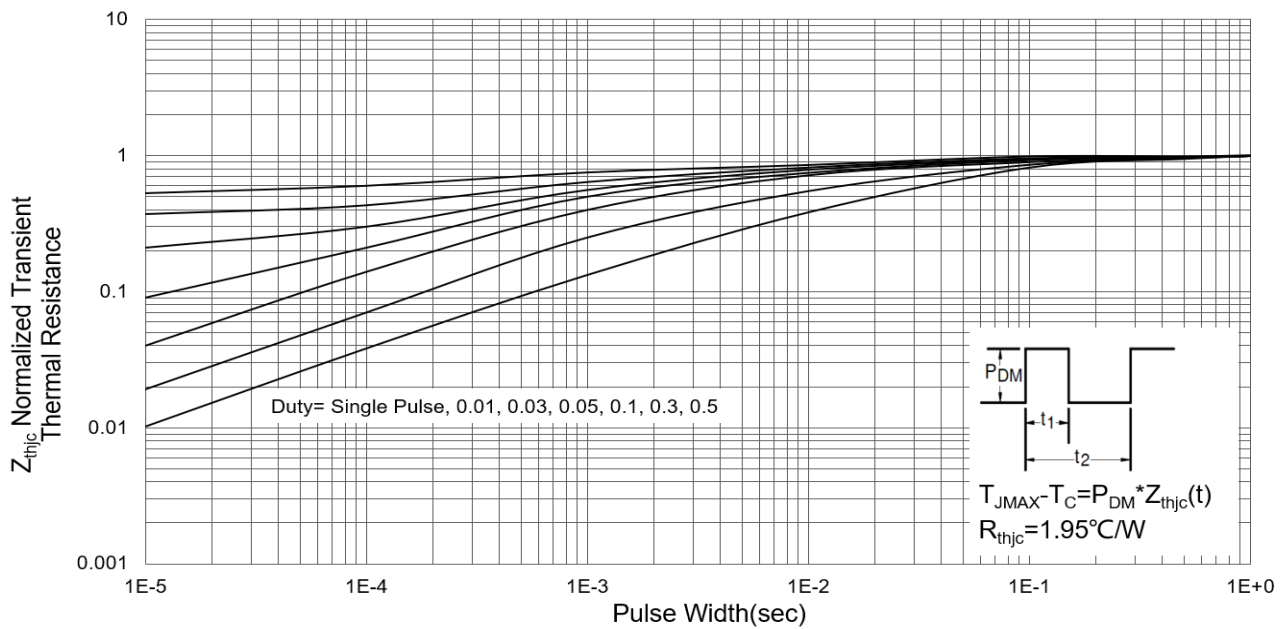
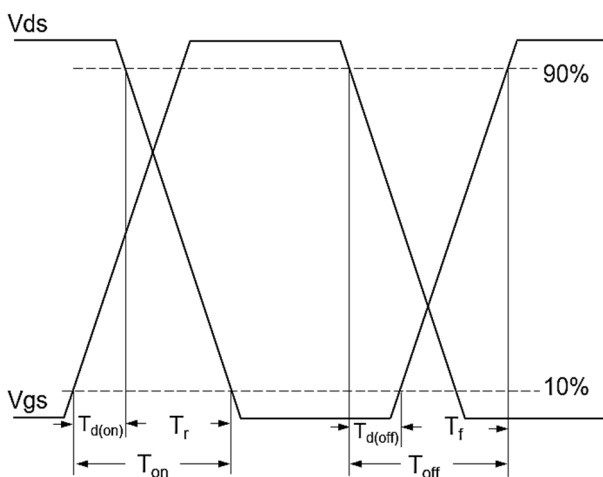
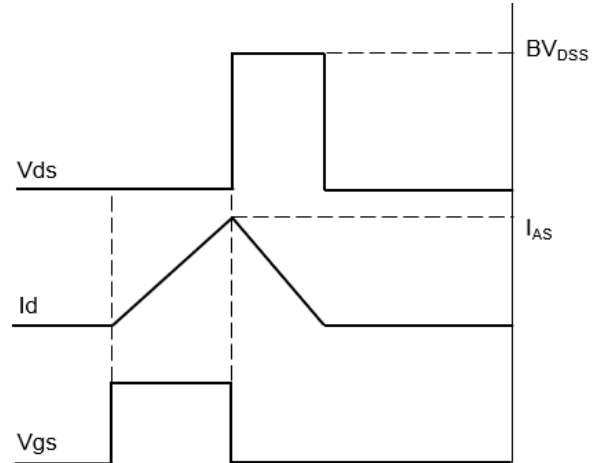
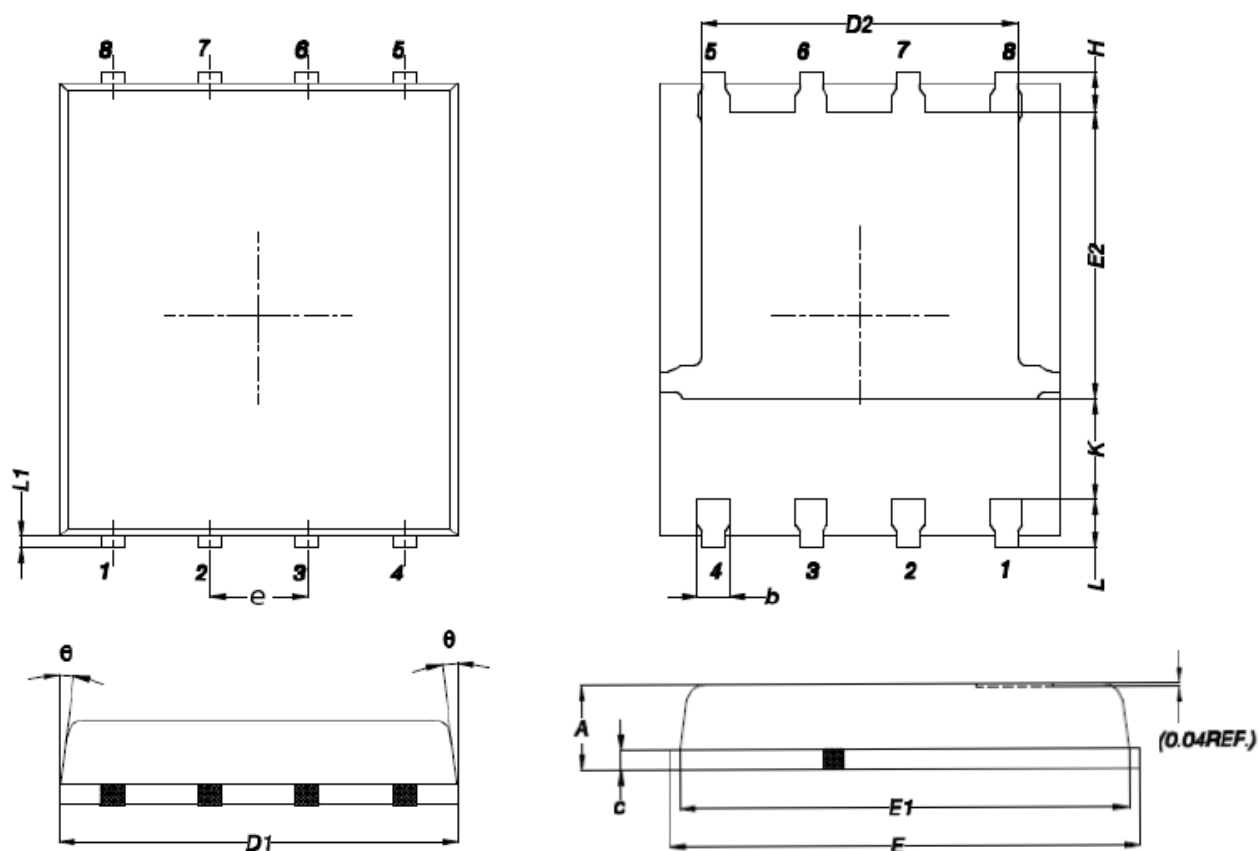
Fig1 Output Characteristics

Fig2 Normalized $R_{DS(on)}$ vs T_J

Fig3 Gate Charge Waveform

Fig4 Transfer Characteristics

Fig5 $R_{DS(on)}$ vs Drain Current and Gate Voltage

Fig6 $R_{DS(on)}$ vs Gate Voltage


Fig7 Capacitance Characteristics

Fig8 Maximum Safe Operation Area

Fig9 Normalized Transient Impedance

Fig10 Switching Time Waveform

Fig11 EAS Waveform


PDFN5*6 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MAX	MIN	MAX	MIN
A	1.200	0.850	0.047	0.031
b	0.510	0.330	0.020	0.013
C	0.300	0.200	0.012	0.008
D1	5.400	4.800	0.212	0.189
D2	4.310	3.610	0.170	0.142
E	6.300	5.850	0.248	0.230
E1	5.960	5.450	0.235	0.215
E2	3.920	3.300	0.154	0.130
e	1.27BSC		0.05BSC	
H	0.650	0.380	0.026	0.015
K	---	1.100	---	0.043
L	0.710	0.380	0.028	0.015
L1	0.250	0.050	0.009	0.002
θ	12°	0°	12°	0°