

Description

The CM4435 is the P-Channel enhancement mode power field effect transistors with high cell density, trench technology. This high density process and design have been optimized switching performance and especially tailored to minimize on-state resistance.

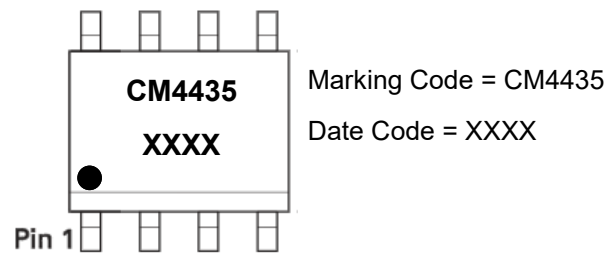
Features

- V_{DS} : -30V
- I_D : -8.5A
- $R_{DS(on)}$ (@ $V_{GS} = -10V$) : < 23m Ω
- $R_{DS(on)}$ (@ $V_{GS} = -4.5V$) : < 34m Ω
- High density cell design for extremely low $R_{DS(on)}$
- Excellent on-resistance and DC current capability

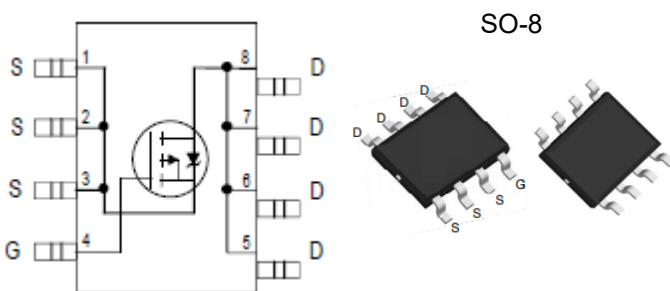
Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Portable Instrumentation
- Load switch

Marking Information



Equivalent Circuit and Pin Configuration



Ordering Information

Part Number	Packaging	Reel Size
CM4435	2500/Tape & Reel	13 inch

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

Parameter		Symbol	Maximum	Unit
Drain-source Voltage		V_{DS}	-30	V
Gate-source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A = 25^\circ\text{C}$	I_D	-8.5	A
	$T_A = 70^\circ\text{C}$		-6.8	A
Pulsed Drain Current ⁽¹⁾		I_{DM}	-34	A
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ ⁽²⁾		P_D	2.5	W
Thermal Resistance Junction-to-Ambient ⁽²⁾		$R_{\theta JA}$	50	$^\circ\text{C/W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BVDSS	VGS=0V, ID=-250μA	-30			V
Zero Gate Voltage Drain Current	IDSS	VDS=- 30V, VGS=0V, TC=25°C			-1	μA
Gate-Body Leakage Current	IGSS	VGS=±20V, VDS=0V			±100	nA
Gate Threshold Voltage	VGS(th)	VDS=VGS, ID=-250μA	-1.0		-3.0	V
Static Drain-Source on-Resistance	RDS(on)	VGS=-10V, ID=-8.5A		16	23	mΩ
		VGS=-4.5V, ID=-5A		22	34	
Diode Forward Voltage	VSD	IS=-8.5A, VGS=0V			-1.2	V
Maximum Body-Diode Continuous Current	IS				-8.5	A
Dynamic Parameters						
Input Capacitance	Ciss	VDS=-15V, VGS=0V, f=1MHz		1300		pF
Output Capacitance	Coss			162		
Reverse Transfer Capacitance	Crss			137		
Switching Parameters						
Total Gate Charge	Qg	VGS=-10V, VDS=-15V, ID=-8.5A		30		nC
Gate Source Charge	Qgs			5.3		
Gate Drain Charge	Qgd			7.6		
Turn-on Delay Time	tD(on)	VGS=-10V, VDD=-15V, ID=-6A, RGEN=2.5Ω		14		ns
Turn-on Rise Time	tr			20		
Turn-off Delay Time	tD(off)			95		
Turn-off Fall Time	tf			65		

Noted: (1) Pulse Test: Pulse Width ≤ 300μs, Duty cycle ≤ 2%.

(2) Device mounted on FR-4 PCB , 1 inch x 0.85 inch x 0.062 inch with 2oz. Copper , t ≤ 10s.

Typical Performance Characteristics

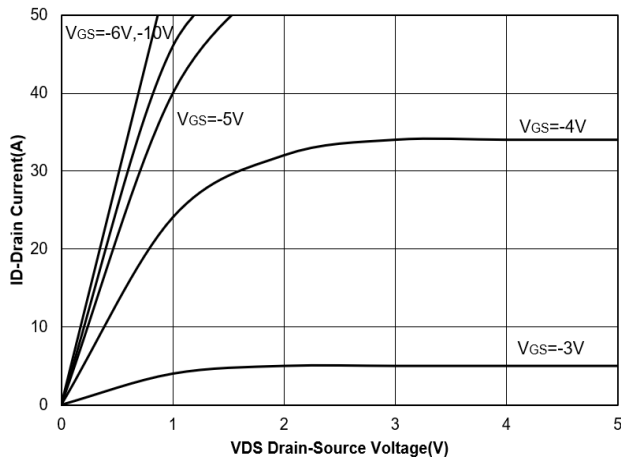


Figure 1. Output Characteristics

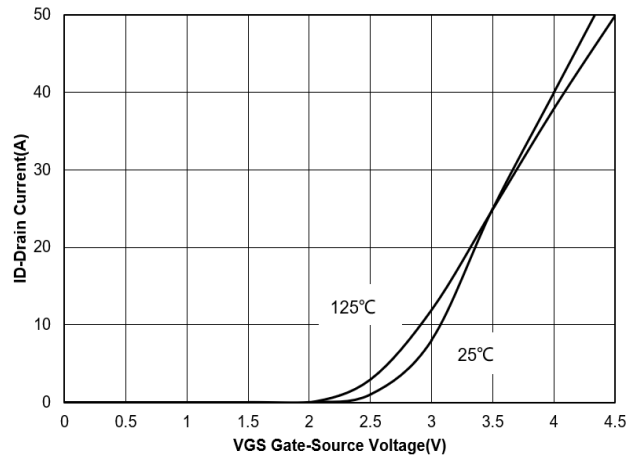


Figure 2. Transfer Characteristics

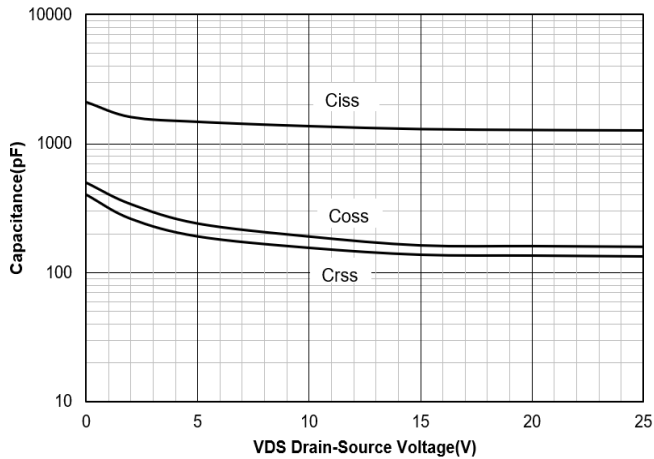


Figure 3. Capacitance Characteristics

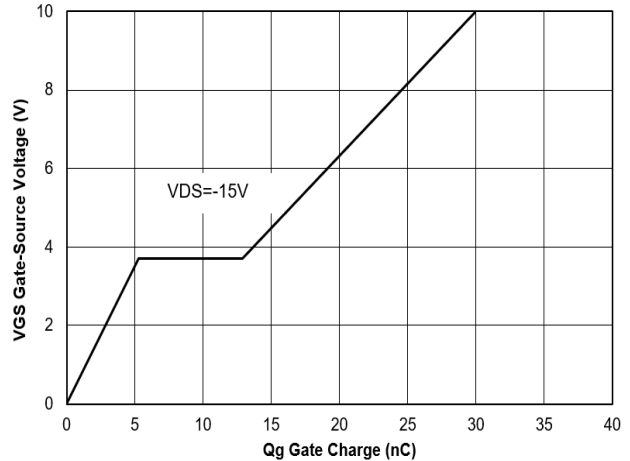


Figure 4. Gate Charge

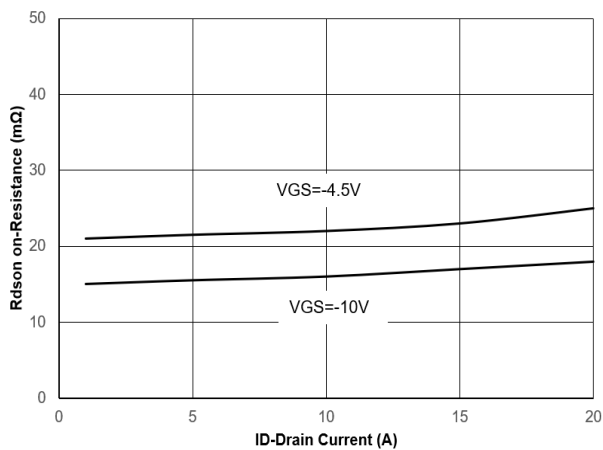


Figure 5. Drain-Source on Resistance

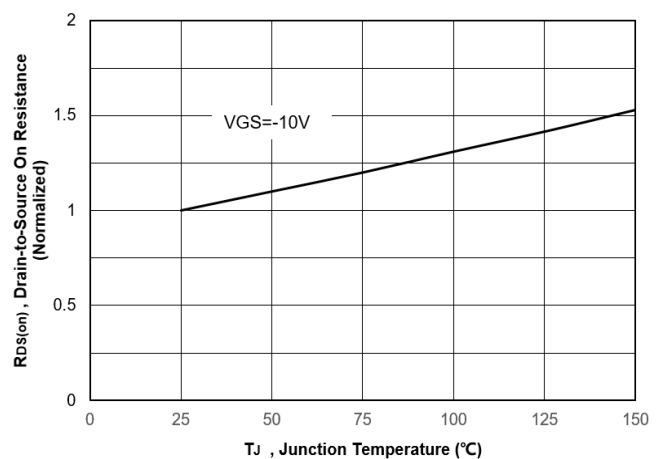


Figure 6. Normalized On-Resistance Vs. Temperature

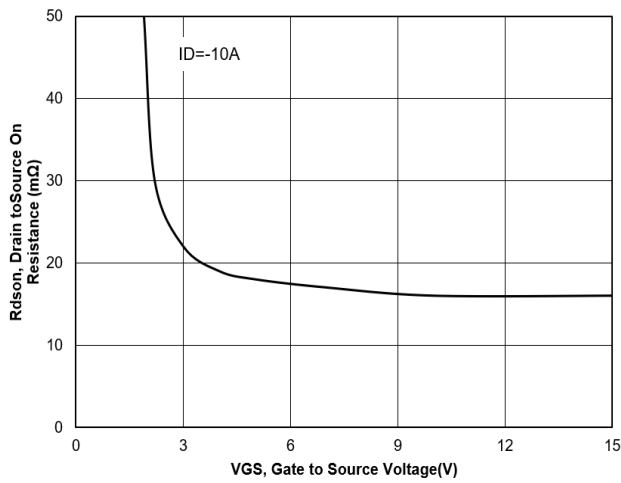


Figure 7. Typical Drain to Source ON Resistance VS Gate Voltage and Drain Current

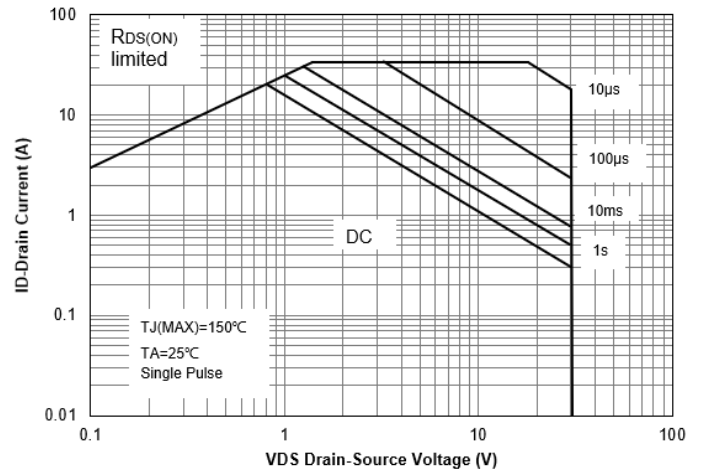


Figure 8. Safe Operation Area

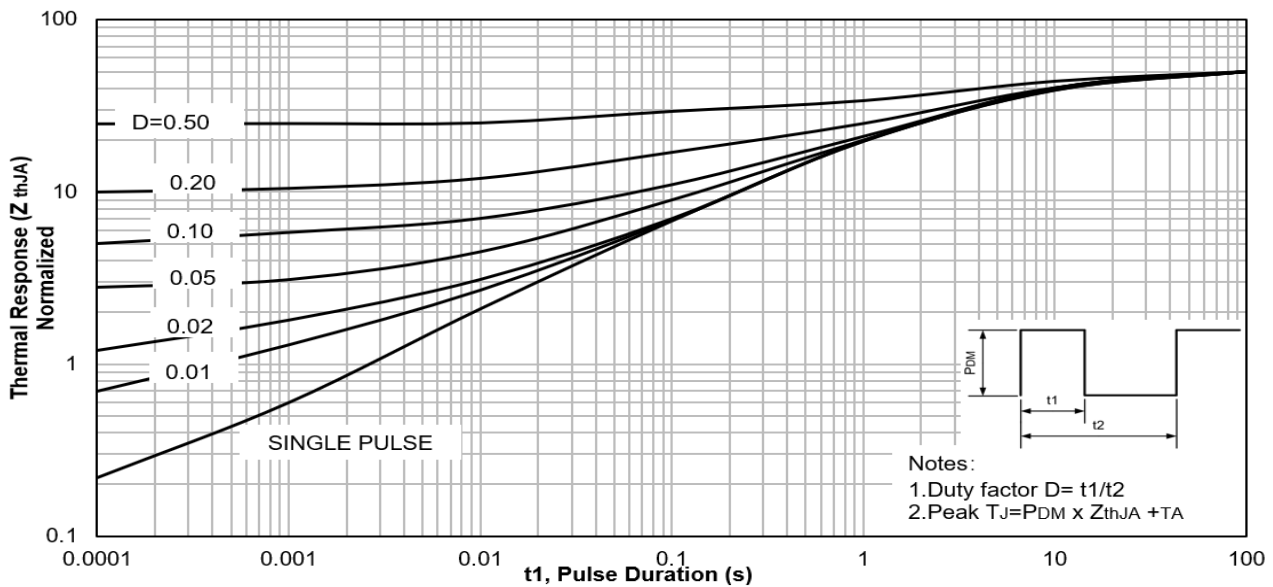


Figure 9. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

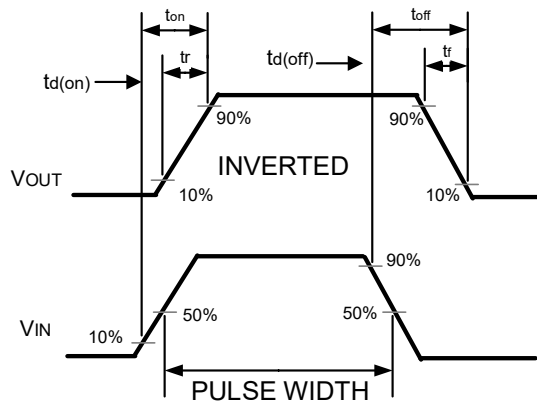
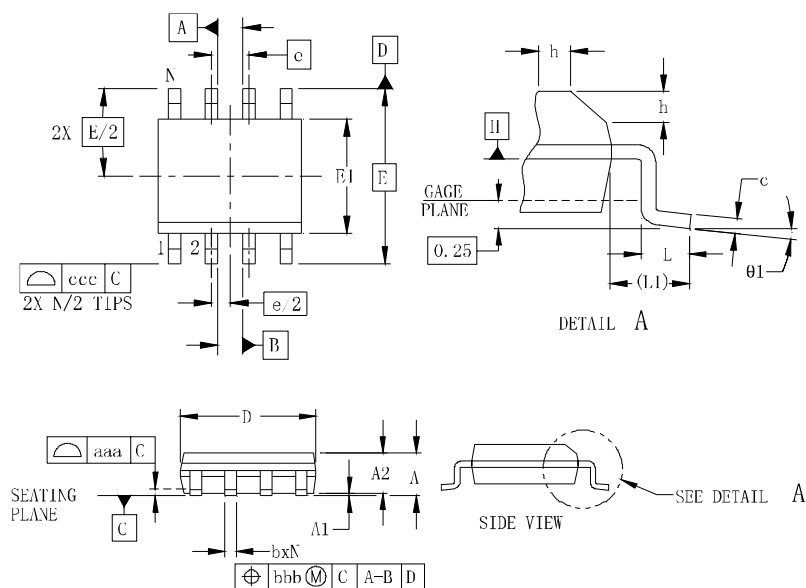


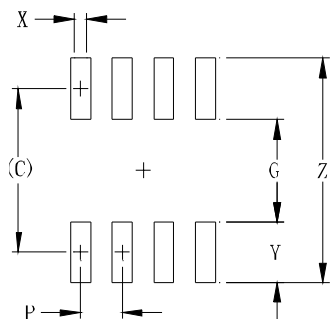
Figure 10. Switching wave

SO-8 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.35		1.75	0.053		0.069
A1	0.10		0.25	0.004		0.010
A2	1.25		1.65	0.049		0.065
b	0.31		0.51	0.012		0.020
c	0.17		0.25	0.007		0.010
D	4.80	4.90	5.00	0.189	0.193	0.197
E1	3.80	3.90	4.00	0.150	0.154	0.157
E	6.00 BSC			0.236 BSC		
e	1.27 BSC			0.050 BSC		
h	0.25		0.50	0.010		0.020
L	0.40	0.72	1.04	0.016	0.028	0.041
L1	(1.04)			(0.041)		
N	8			8		
θ_1	0°		8°	0°		8°
aaa	0.10			0.004		
bbb	0.25			0.010		
ccc	0.20			0.008		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	5.20	0.205
G	3.00	0.118
P	1.27	0.050
X	0.60	0.024
Y	2.20	0.087
Z	7.40	0.291

Contact Information

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