

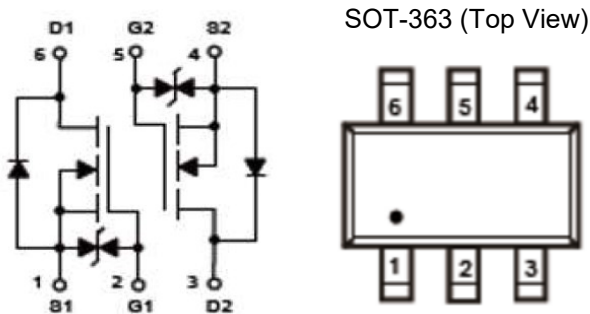
Description

CM3134EW is the N-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} : 20V
- I_D : 1A
- $R_{DS(on)}$ (@ $V_{GS}=4.5V$) : < 250m Ω
- $R_{DS(on)}$ (@ $V_{GS}=2.5V$) : < 350m Ω
- High density cell design for extremely low $R_{DS(on)}$
- Excellent on-resistance and DC current capability

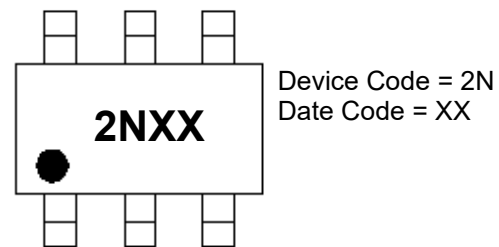
Equivalent Circuit and Pin Configuration



Applications

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

Marking Information



Ordering Information

Part Number	Packaging	Reel Size
CM3134EW	3000/Tape & Reel	7 inch

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

Parameter	Symbol	Maximum	Unit	
Drain-source Voltage	V_{DS}	20	V	
Gate-source Voltage	V_{GS}	± 12	V	
Continuous Drain Current	I_D	$T_A=25^\circ C$, Steady State	1.0	A
		$T_A=75^\circ C$, Steady State	0.8	A
Pulsed Drain Current ⁽¹⁾	I_{DM}	4.0	A	
Total Power Dissipation @ $T_A=25^\circ C$ ⁽²⁾	P_D	350	mW	
Thermal Resistance Junction-to-Ambient ⁽²⁾ @Steady State	$R_{\theta JA}$	357	$^\circ C/W$	
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ C$	

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V, T _C =25°C			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±10V, V _{DS} =0V			±10	uA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.35	0.75	1.1	V
Static Drain-Source on-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =0.65A		120	250	mΩ
		V _{GS} =2.5V, I _D =0.3A		160	350	
Diode Forward Voltage	V _{SD}	I _S =1.0A, V _{GS} =0V			1.2	V
Maximum Body-Diode Continuous Current	I _S				1.0	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHz		48		pF
Output Capacitance	C _{oss}			12		
Reverse Transfer Capacitance	C _{rss}			6.5		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =10V, I _D =0.5A		1		nC
Gate Source Charge	Q _{gs}			0.28		
Gate Drain Charge	Q _{gd}			0.26		
Turn-on Delay Time	t _{D(on)}	V _{GS} =4.5V, V _{DD} =10V, I _D =0.5A, R _{GEN} =10Ω		2		ns
Turn-on Rise Time	t _r			18.8		
Turn-off Delay Time	t _{D(off)}			10		
Turn-off Fall Time	t _f			23		

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

(2) Device mounted on an FR4 PCB, single-sided copper, tin-plated and mounting pad for drain 6cm².

Typical Performance Characteristics

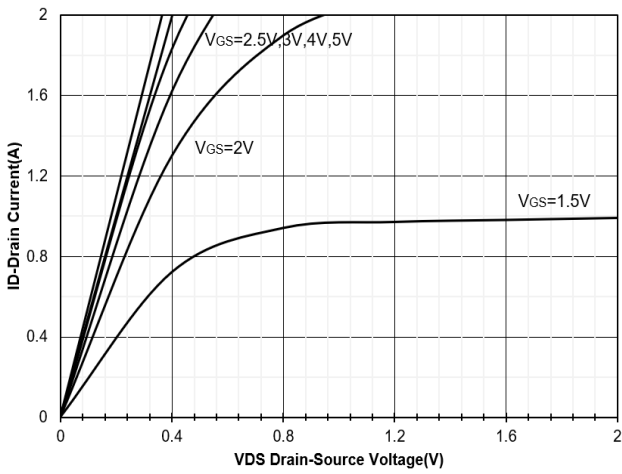


Figure 1. Output Characteristics

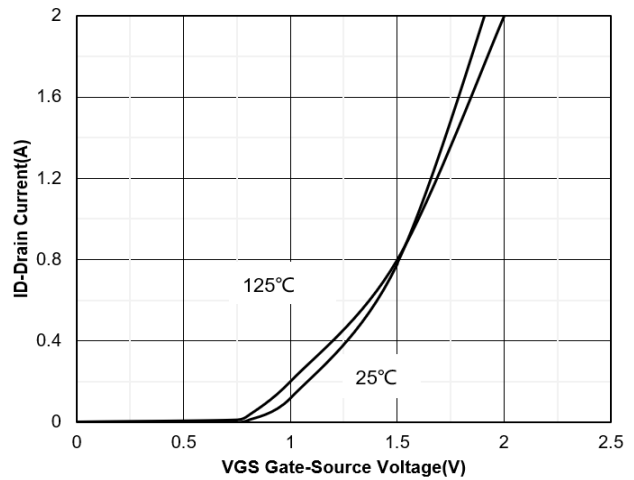


Figure 2. Transfer Characteristics

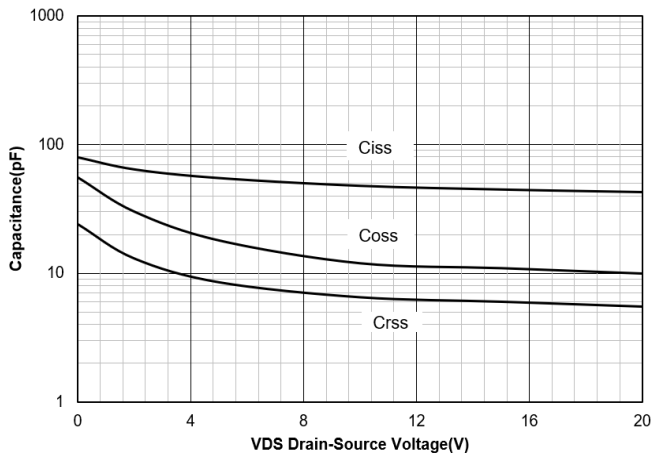


Figure 3. Capacitance Characteristics

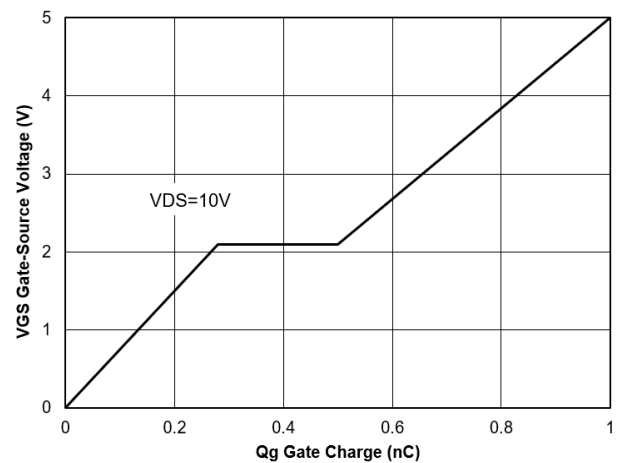


Figure 4. Gate Charge

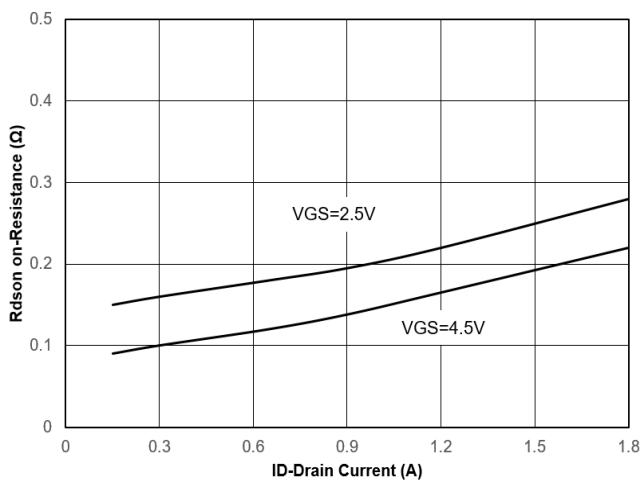


Figure 5. Drain-Source on Resistance

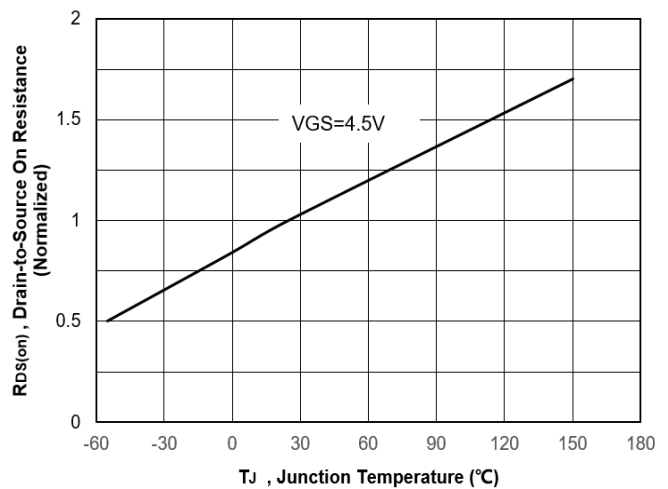


Figure 6. Normalized On-Resistance Vs. Temperature

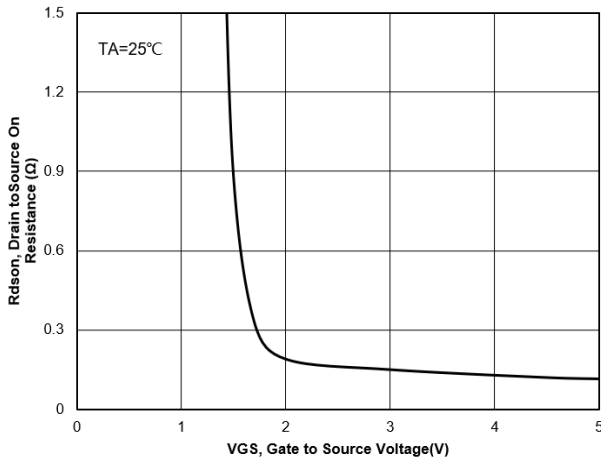


Figure 6. Typical Drain to Source ON Resistance VS Gate Voltage and Drain Current

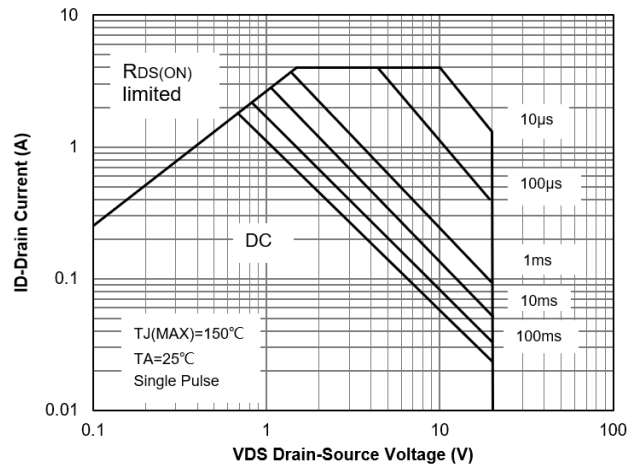


Figure 7. Safe Operation Area

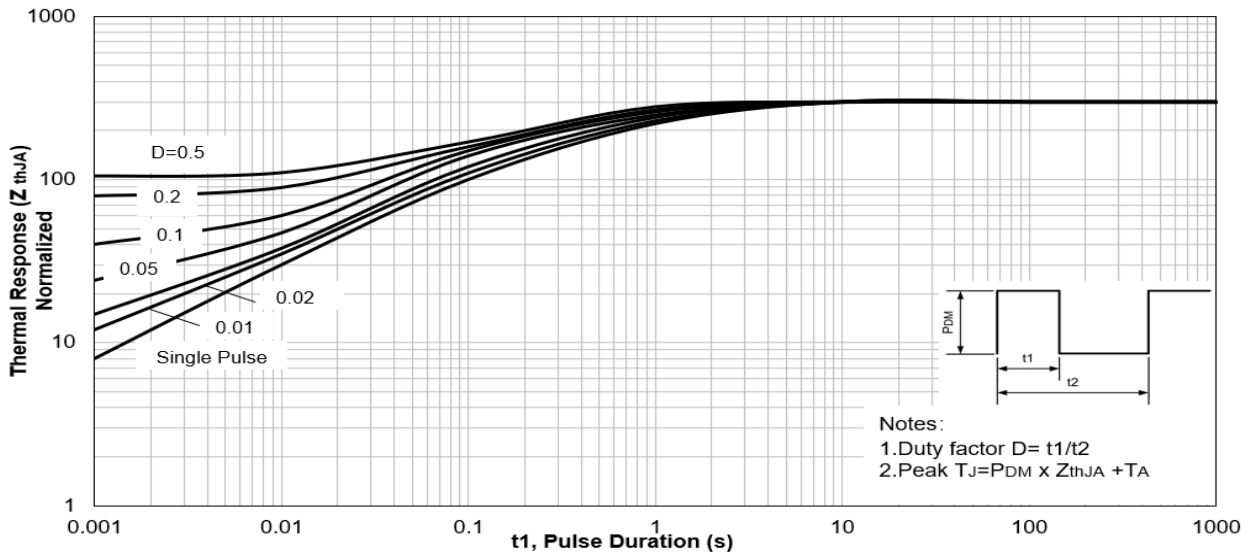


Figure 8. Maximum Effective Transient Thermal Impedance ,Junction-to-Ambient

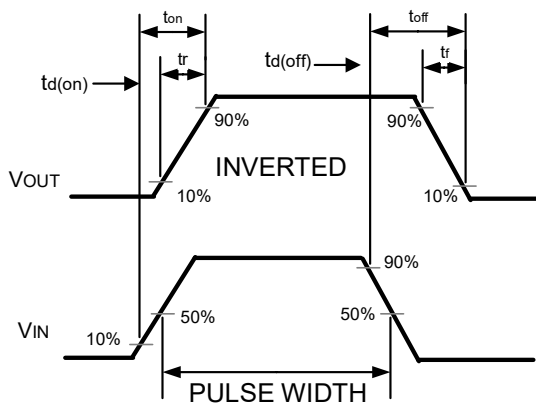
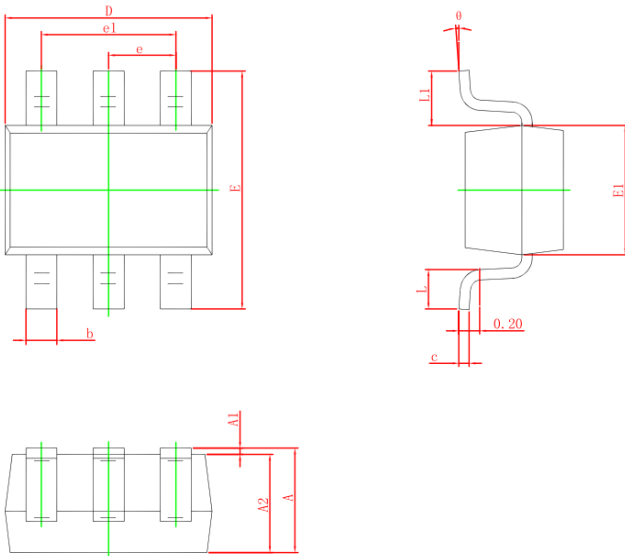


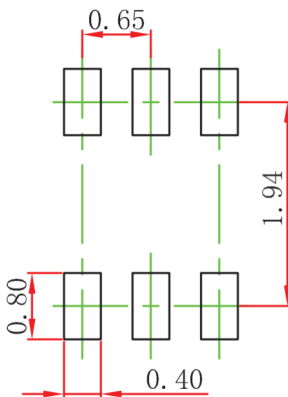
Figure 9. Switching wave

SOT-363 Package Outline Drawing



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	2.150	2.450	0.085	0.096
E1	1.150	1.350	0.045	0.053
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.260	0.460	0.010	0.018
L1	0.525 REF.		0.021 REF.	
θ	0°	8°	0°	8°

Suggested Land Pattern



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