Description

CM3134BT 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.

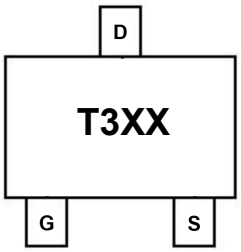
Features

- V_{DS}: 20V
- I_D: 0.75A
- $R_{DS_{ON}}$ ($@V_{GS}$=4.5V) : < 330mΩ
- $R_{DS_{ON}}$ ($@V_{GS}$=2.5V) : < 480mΩ
- $R_{DS_{ON}}$ ($@V_{GS}$=1.8V) : < 800mΩ
- High density cell design for extremely low $R_{DS_{ON}}$
- Excellent on-resistance and DC current capability

Applications

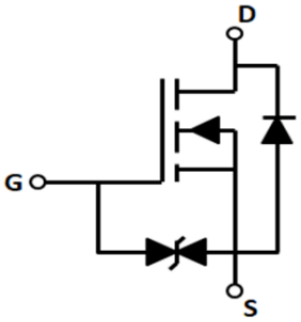
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Portable Instrumentation
- Load switch

Marking Information

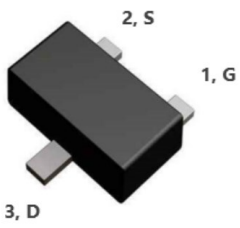


Device Code = T3
Date Code = XX

Equivalent Circuit and Pin Configuration



SOT-523 (Top View)



Ordering Information

Part Number	Packaging	Reel Size
CM3134BT	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A=25 ℃ unless otherwise noted)

Parameter		Symbol	Maximum	Unit
Drain-source Voltage		V_{DS}	20	V
Gate-source Voltage		V_{GS}	±10	V
Continuous Drain Current	T_A=25°C , Steady State	I_D	0.75	A
	T_A=75°C ,Steady State		0.58	A
Pulsed Drain Current[1]		I_{DM}	3.0	A
Total Power Dissipation @ T_A=25°C [2]	@Steady State	P_D	310	mW
Thermal Resistance Junction-to-Ambient [2]	@Steady State	$R_{\theta JA}$	400	°C/W
Junction and Storage Temperature Range		T_J,T_{STG}	-55 to +150	°C

Electrical Characteristics (T_J=25 ℃ 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		1.1	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	V_{GS}=4.5V,I_D=0.5A		220	330	mΩ
		V_{GS}=2.5V,I_D=0.3A		300	480	
		V_{GS}=1.8V,I_D=0.25A		450	800	
Diode Forward Voltage	V_{SD}	I_S=0.75A,V_{GS}=0V			1.2	V
Maximum Body-Diode Continuous Current	I_S				0.75	A
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=16V,V_{GS}=0V,f=1MHz		24		pF
Output Capacitance	C_{oss}			7.5		
Reverse Transfer Capacitance	C_{rss}			3		
Switching Parameters						
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=4.5V,V_{DD}=10V, I_D=0.5A,R_{GEN}=10Ω		6.7		ns
Turn-on Rise Time	t_r			4.8		
Turn-off Delay Time	$t_{D(off)}$			17.3		
Turn-off Fall Time	t_f			7.4		

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

(2) Surface mounted on FR4 board using the minimum recommended pad size.

Typical Performance Characteristics

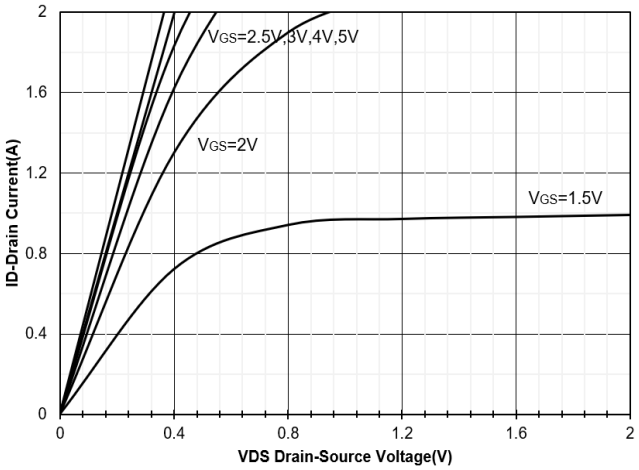


Figure 1. Output Characteristics

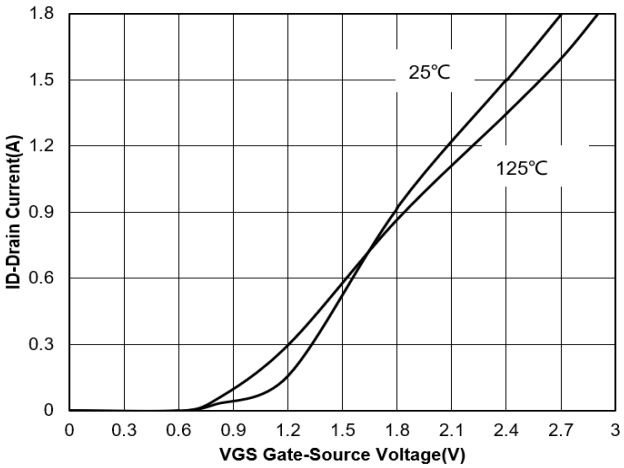


Figure 2. Transfer Characteristics

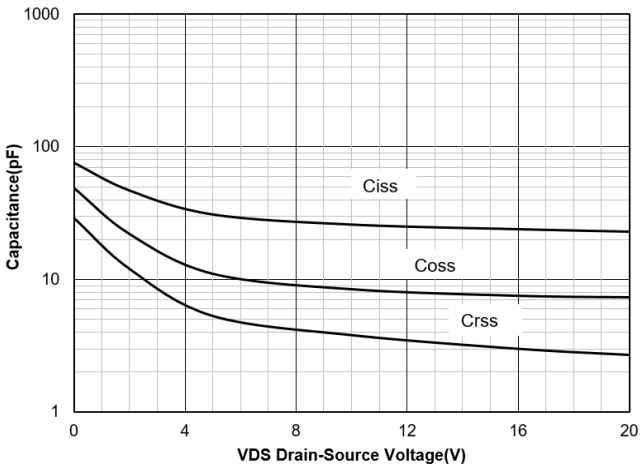


Figure 3. Capacitance Characteristics

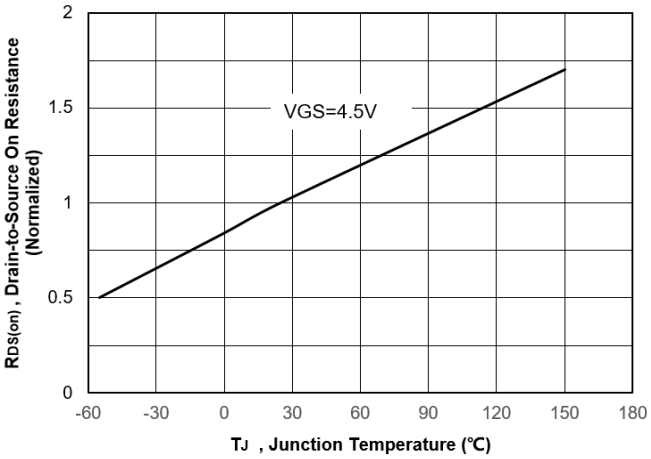


Figure 4. Normalized On-Resistance Vs. Temperature

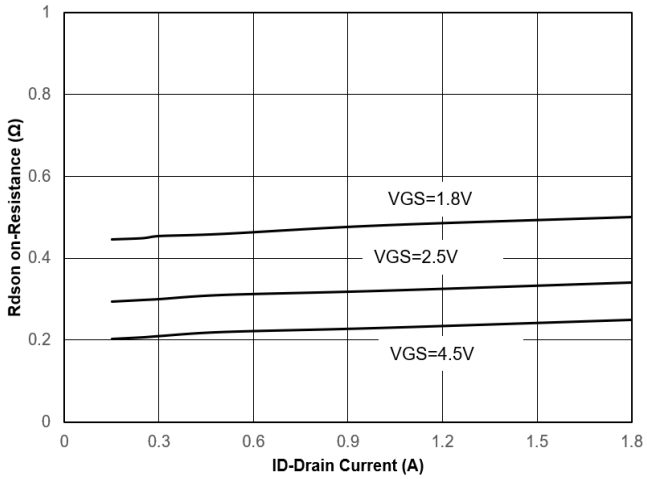


Figure 5. Drain-Source on Resistance

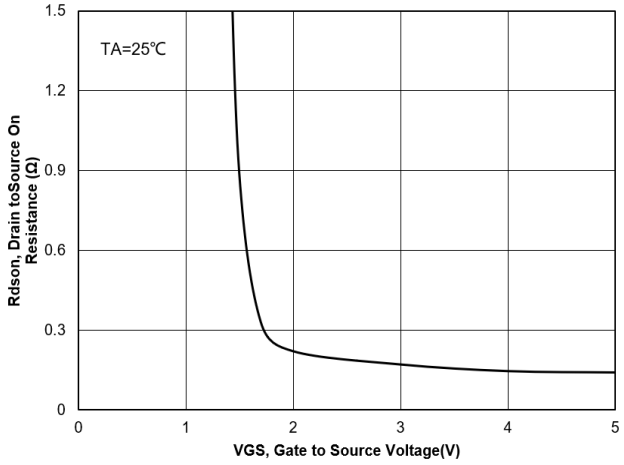


Figure 6. Typical Drain to Source ON Resistance VS Gate Voltage and Drain Current

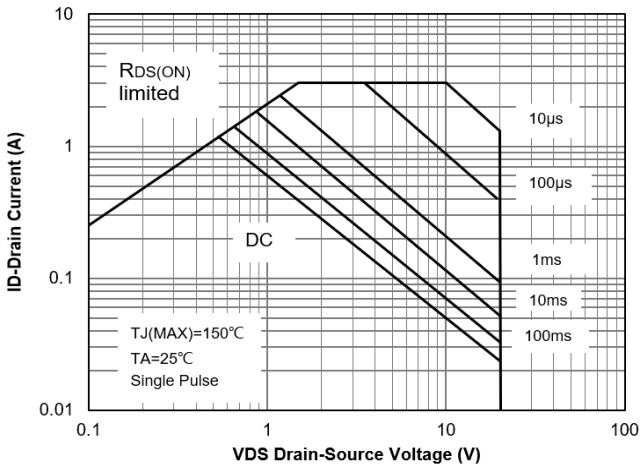


Figure 7. Safe Operation Area

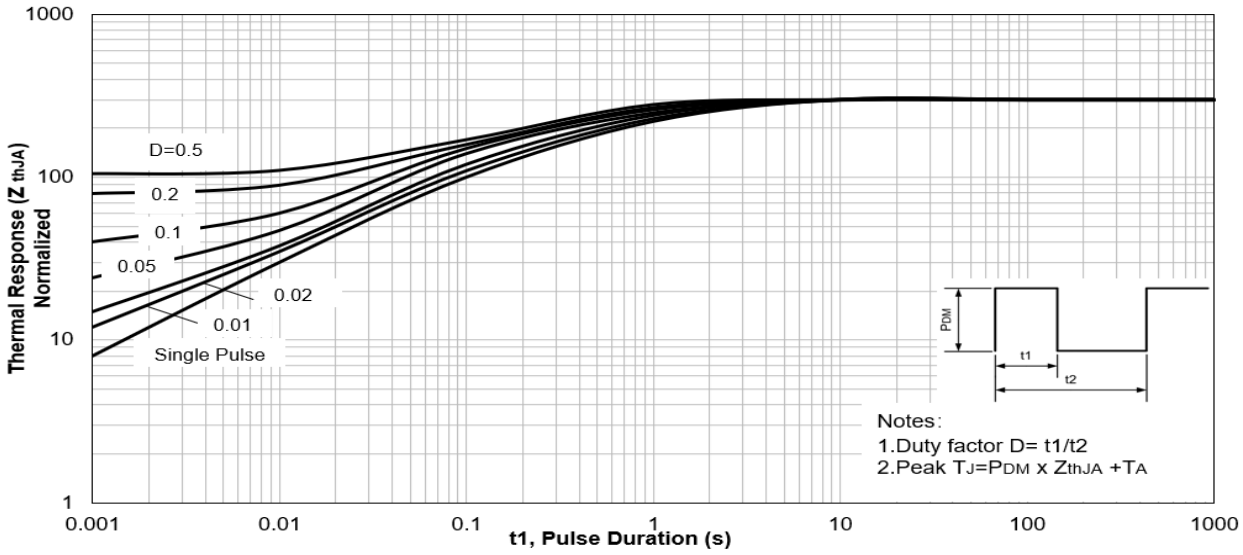


Figure 8. Maximum Effective Transient Thermal Impedance ,Junction-to-Ambient

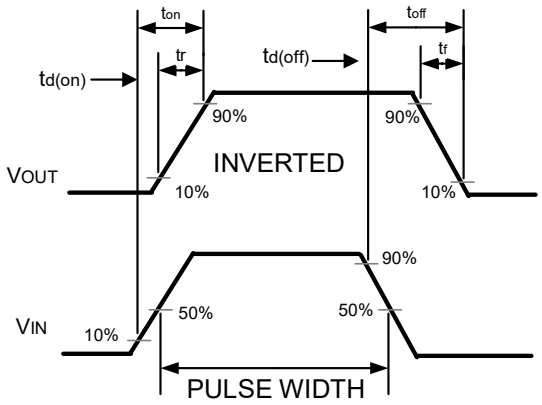
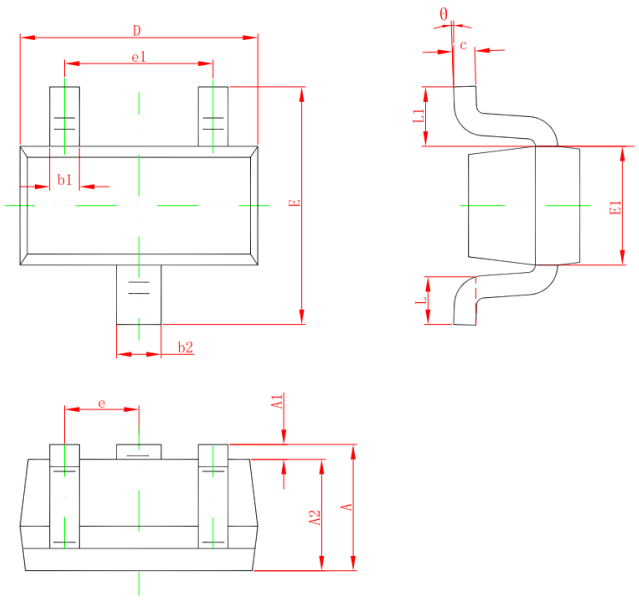


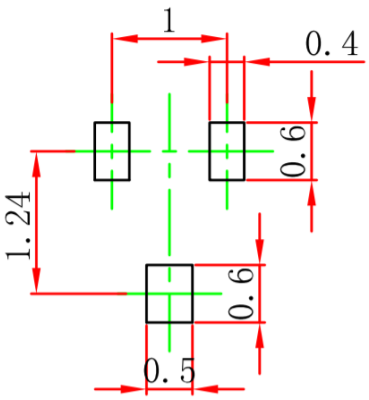
Figure 9. Switching wave

SOT-523 Package Outline Drawing



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	1.450	1.750	0.057	0.069
E1	0.700	0.900	0.028	0.035
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Land Pattern



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