

Product Summary

Part #	V_{DS}	$R_{DS(on).typ}$ (@ $V_{GS}=4.5V$)	$R_{DS(on).typ}$ (@ $V_{GS}=2.5V$)	I_D
EFM3134WT	20V	260m Ω	310m Ω	0.75A

Features

- High-Side Switching
- Low On-Resistance
- Low Threshold
- Fast Switching Speed

Application

- Drivers: Relays, Solenoids,
- Lamps, Hammers, Displays, Memories
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones, Pagers

Ordering Information:

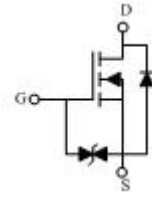
Part NO.	EFM3134WT
Marking	34K
Packing Information	REEL TAPE
Basic ordering unit (pcs)	3000

Absolute Maximum Ratings ($T_C=25^{\circ}C$)

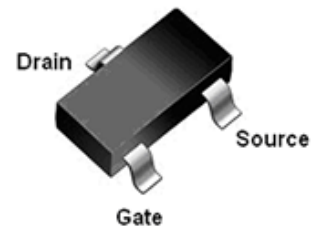
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	I_D	0.75	A
Drain Current-Pulsed ^(Note 1)	I_{DM}	3	A
Maximum Power Dissipation	P_D	0.15	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^{\circ}C$

Thermal Characteristic

Thermal Resistance, Junction-to-Ambient ^(Note 2)	$R_{\theta JA}$	833	$^{\circ}C/W$
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N-Channel MOSFET



SOT-523



• Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)

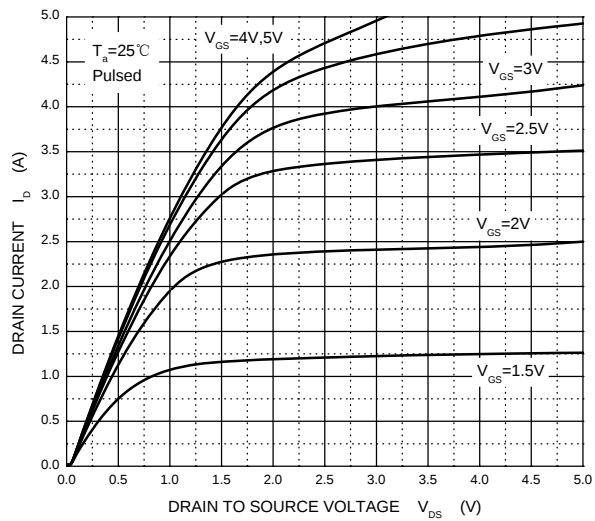
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250uA	20	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±10V V _{DS} =0V	--	--	±100	nA
On Characteristics ^(Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250uA	0.35	0.54	1.0	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =4.5V I _D =0.75A	--	260	380	mΩ
		V _{GS} =2.5V I _D =0.65A	--	310	450	mΩ
Dynamic Characteristics ^(Note4)						
Input Capacitance	C _{ISS}	V _{DS} =16V V _{GS} =0V F=1.0MHz	--	--	120	PF
Output Capacitance	C _{OSS}		--	--	20	PF
Reverse Transfer Capacitance	C _{RSS}		--	--	15	PF
Switching Characteristics ^(Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =10V I _D =0.5A V _{GS} =4.5V R _G =10Ω,	--	6.7	--	nS
Turn-on Rise Time	t _r		--	4.8	--	nS
Turn-Off Delay Time	t _{d(off)}		--	17.3	--	nS
Turn-Off Fall Time	t _f		--	7.4	--	nS
Total Gate Charge	Q _g	V _{DS} =16V I _D =0.65A V _{GS} =4.5V	--	1.3	--	nC
Gate-Source Charge	Q _{gs}		--	0.2	--	nC
Gate-Drain Charge	Q _{gd}		--	0.5	--	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage ^(Note 3)	V _{SD}	V _{GS} =0V I _S =0.75A	--	0.79	1.2	V
Diode Forward Current ^(Note 2)	I _S		--	--	0.75	A

Notes:

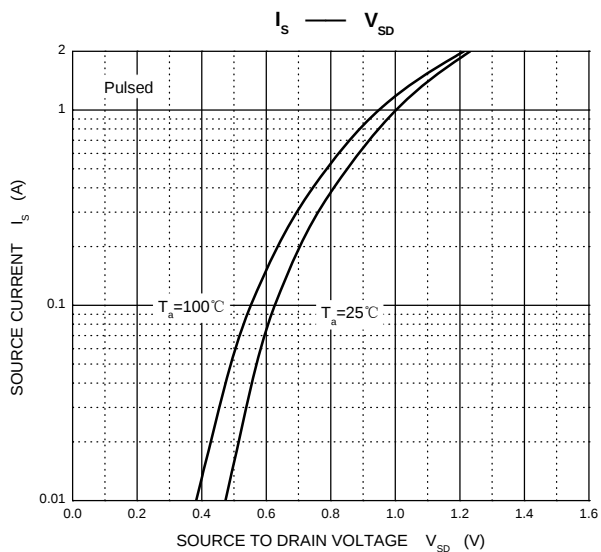
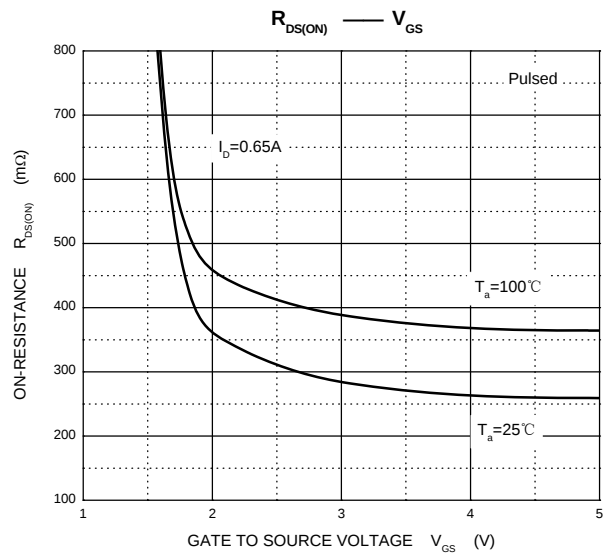
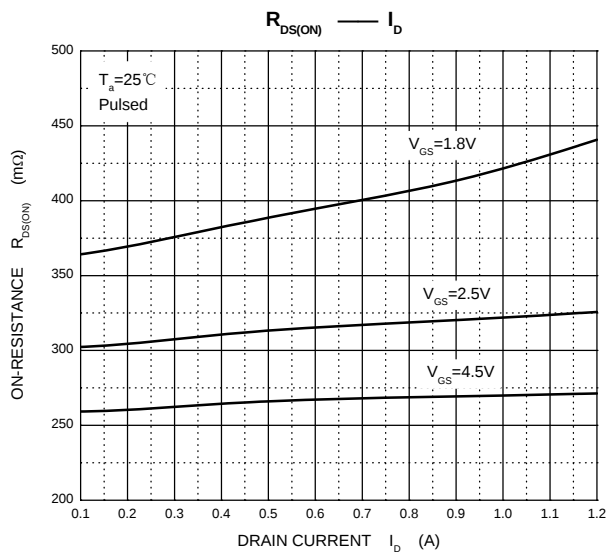
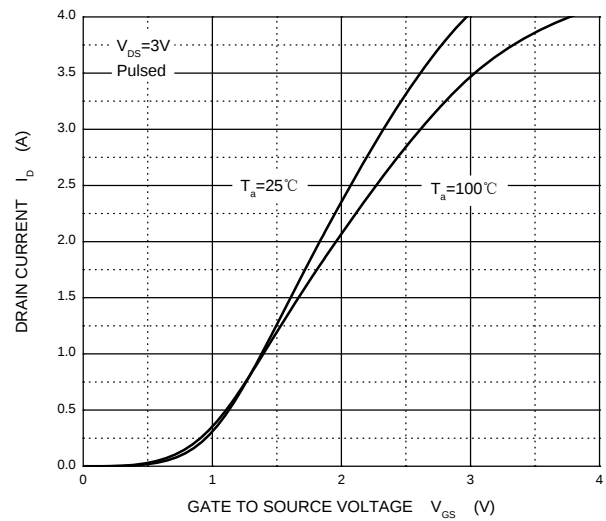
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at T_a=25°C.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤0.5%.
4. These parameters have no way to verify.

• Typical Characteristics

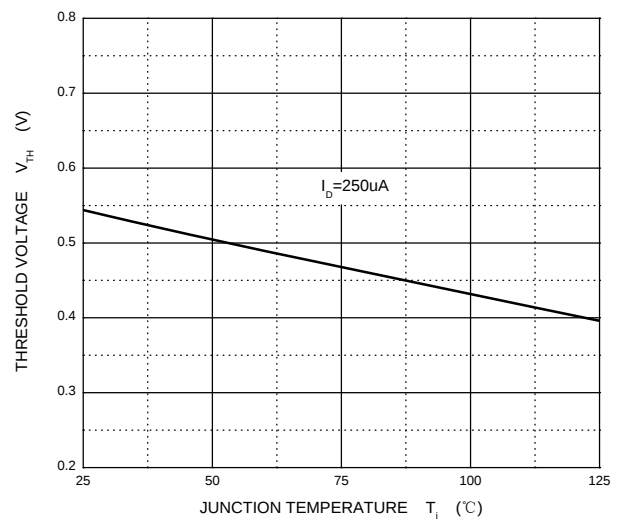
Output Characteristics



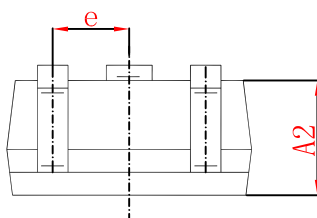
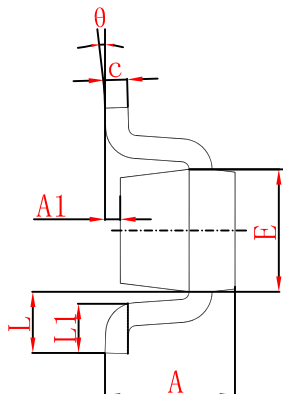
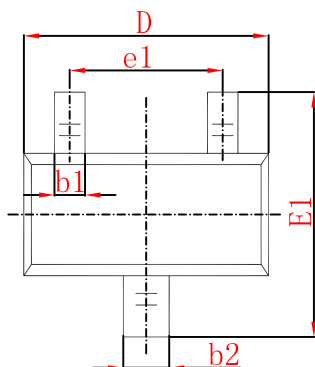
Transfer Characteristics



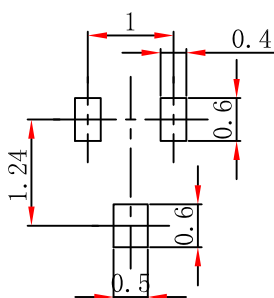
Threshold Voltage



SOT-523 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In 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	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
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°



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.