

Product Summary

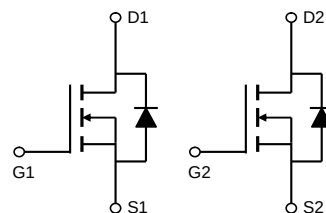
Part #	V_{DS}	$R_{DS(on).typ}$ (@ $V_{GS}=10V$)	$R_{DS(on).typ}$ (@ $V_{GS}=4.5V$)	I_D
EFM6800L2X	30V	35m Ω	46m Ω	3.4A

Description

- The EFM6800L2X is the high cell density trenched
- Dual N-ch MOSFETs which provide excellent
- RDSON and gate charge for most of the
- synchronous buck converter applications.
- The EFM6800L2X meet the RoHS and Green
- Product requirement, 100 % EAS guaranteed
- with full function reliability approved.

Application

- Super Low Gate Charge 100% EAS Guaranteed
- Green Device Available Excellent CdV/dt effect decline
- Advanced high cell density Trench technology



Dual N-Channel MOSFET



SOT-23-6L

Ordering Information:

Part NO.	EFM6800L2X
Marking	H0****
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}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	I_D	3.4	A
Drain Current-Pulsed ^(Note 1)	I_{DM}	20	A
Maximum Power Dissipation	P_D	1.2	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)	$R_{\theta JA}$	110	$^{\circ}C/W$
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• 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	30	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V V _{DS} =0V	--	--	±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250uA	0.5	1.0	1.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V I _D =3.4A	--	35	44	mΩ
		V _{GS} =4.5V I _D =3A	--	46	60	mΩ
Forward Transconductance	g _{FS}	V _{DS} =5V I _D =3.4A	--	14	--	S

Dynamic Characteristics (Note4)						
Input Capacitance	C _{ISS}	V _{DS} =15V V _{GS} =0V F=1.0MHz	--	235	--	PF
Output Capacitance	C _{OSS}		--	35	--	PF
Reverse Transfer Capacitance	C _{RSS}		--	18	--	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =15V I _D =3.4A V _{GS} =10V R _G =3Ω,	--	3.5	--	nS
Turn-on Rise Time	t _r		--	1.5	--	nS
Turn-Off Delay Time	t _{d(off)}		--	17.5	--	nS
Turn-Off Fall Time	t _f		--	2.5	--	nS
Total Gate Charge	Q _g	V _{DS} =15V I _D =3.4A V _{GS} =10V	--	10	--	nC
Gate-Source Charge	Q _{gs}		--	0.95	--	nC
Gate-Drain Charge	Q _{gd}		--	1.6	--	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} =0V I _S =3.4A	--	0.75	1.2	V
Diode Forward Current (Note 2)	I _S		--	--	3.4	A

Notes:

a. Surface Mounted on FR4 Board ,T<10 sec ;

• Typical Characteristics

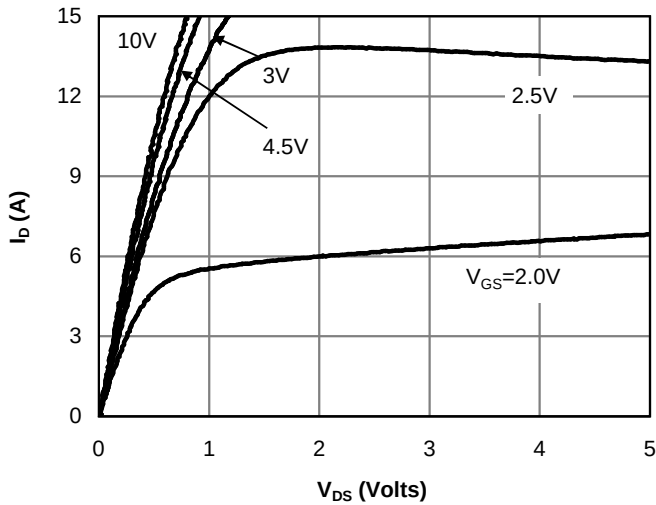


Fig 1: On-Region Characteristics (Note E)

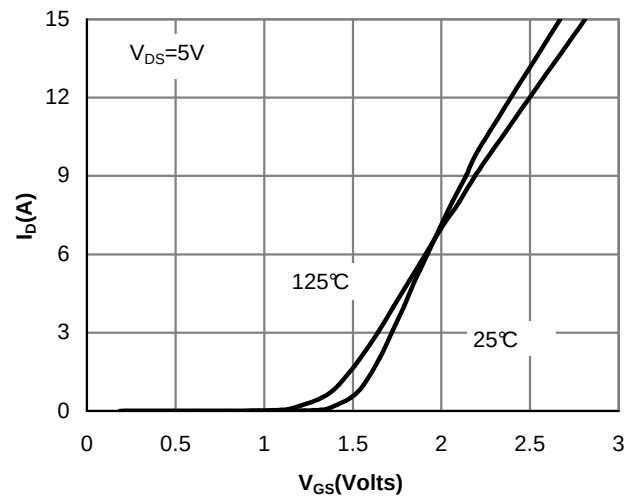


Figure 2: Transfer Characteristics (Note E)

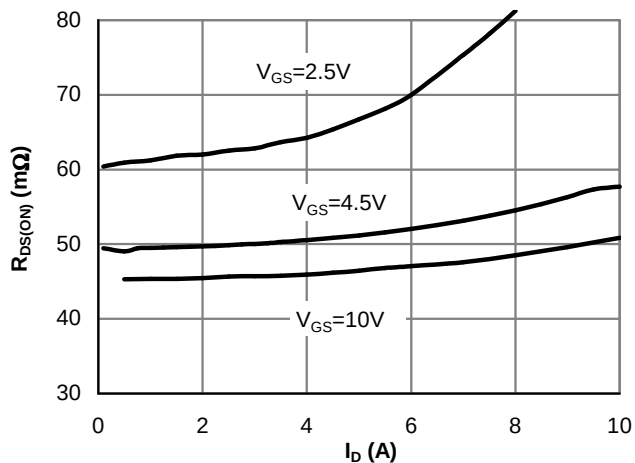


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

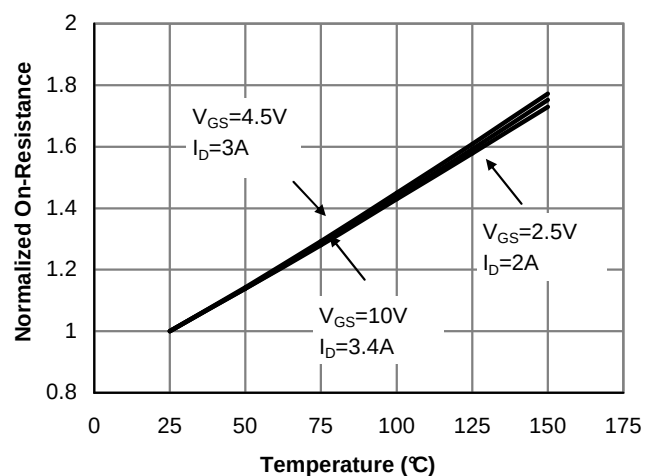


Figure 4: On-Resistance vs. Junction Temperature (Note E)

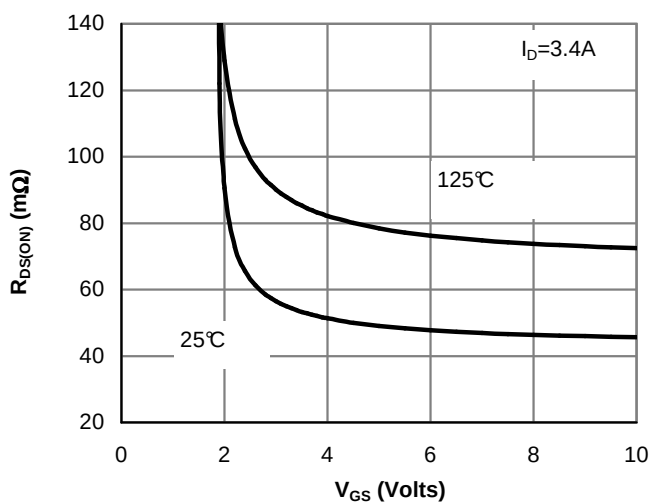


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

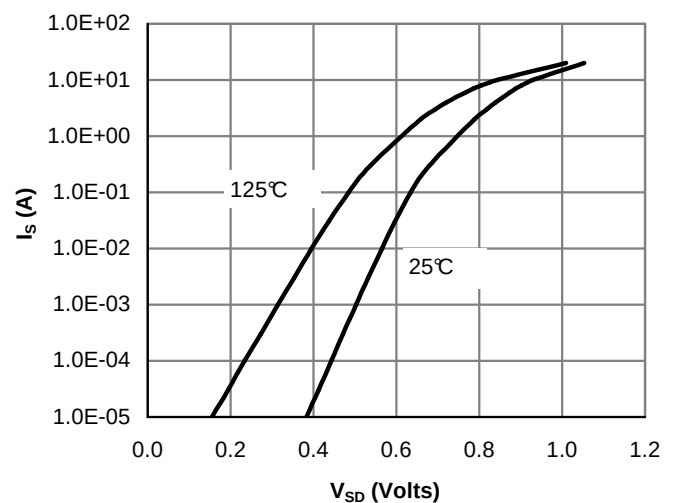
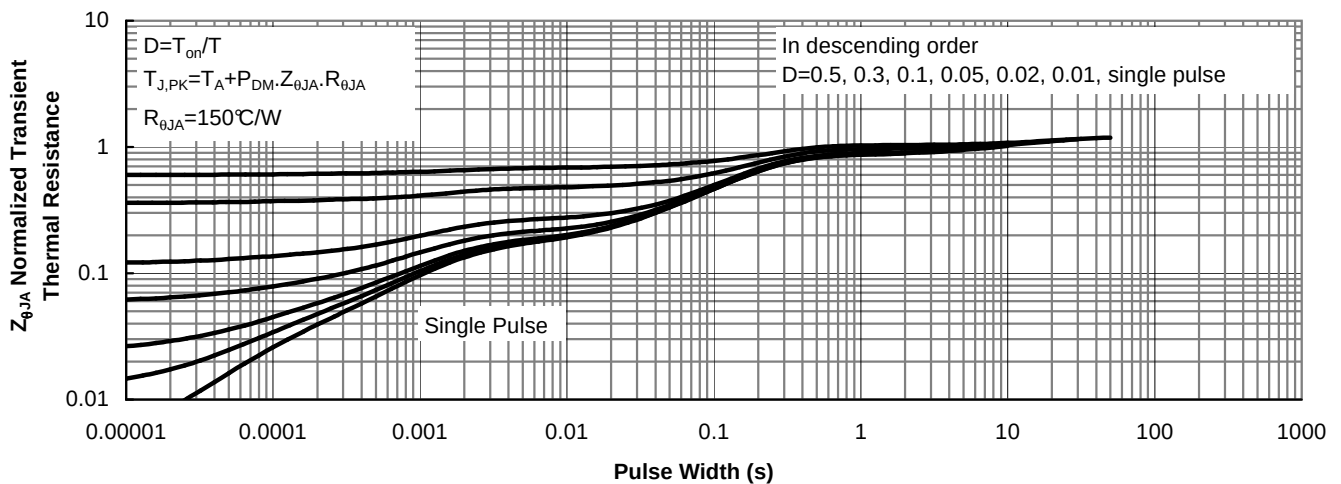
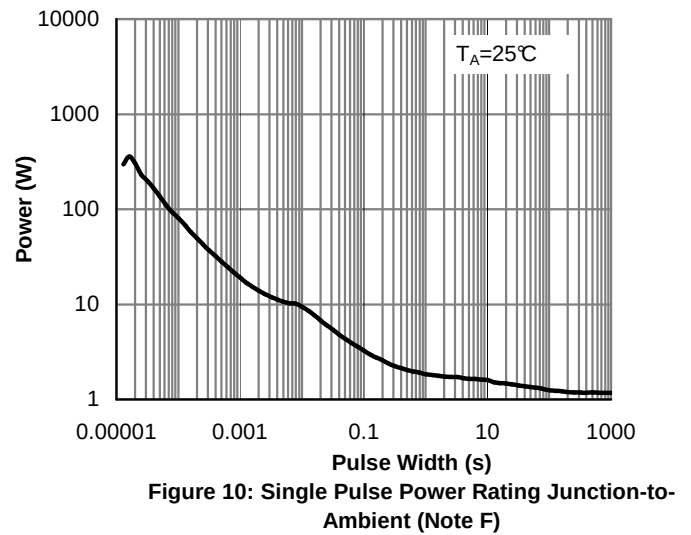
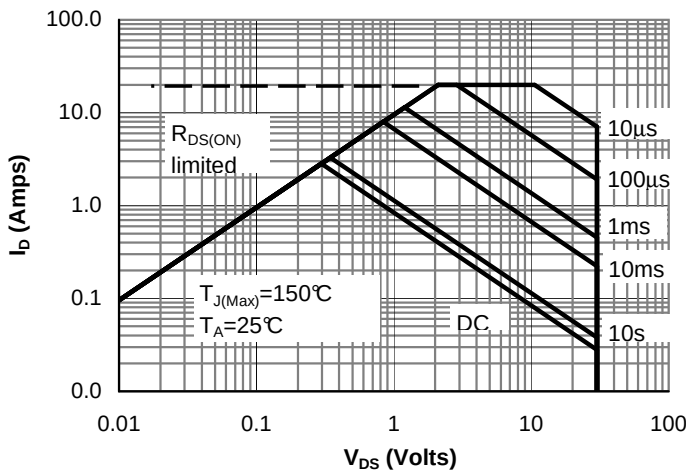
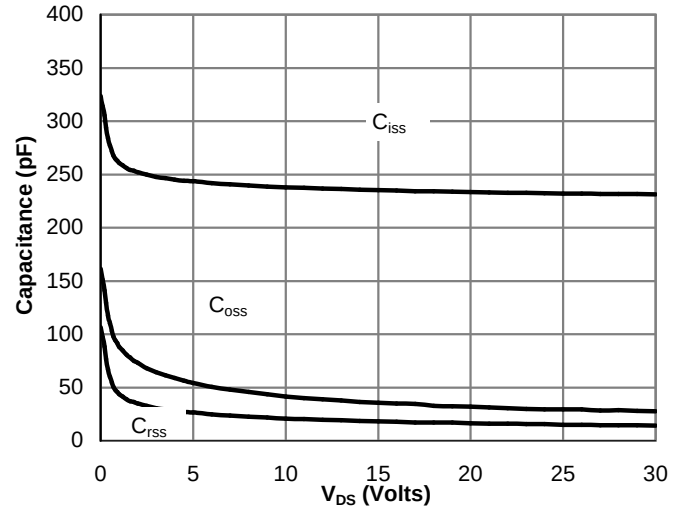
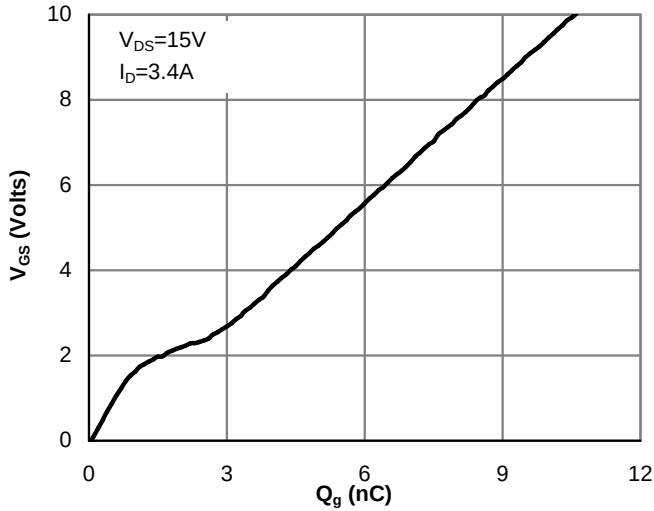
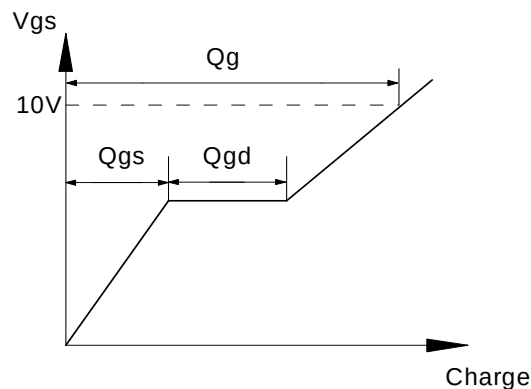
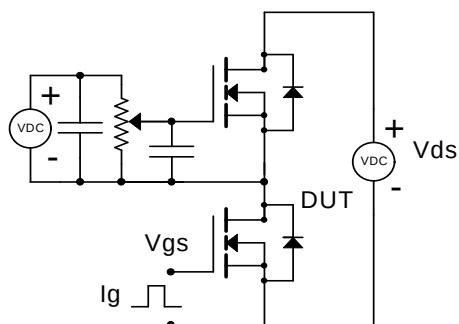


Figure 6: Body-Diode Characteristics (Note E)

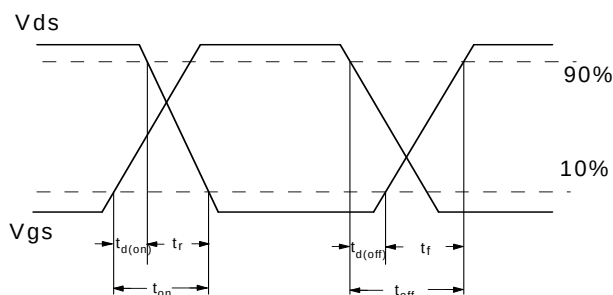
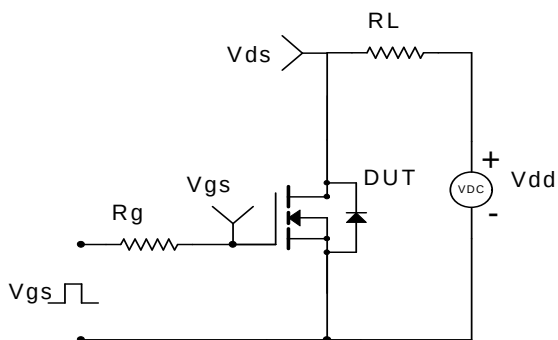


• Test circuit

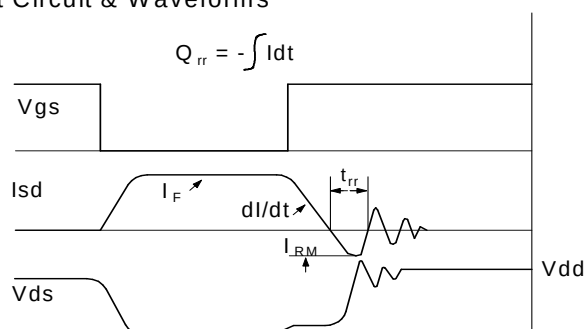
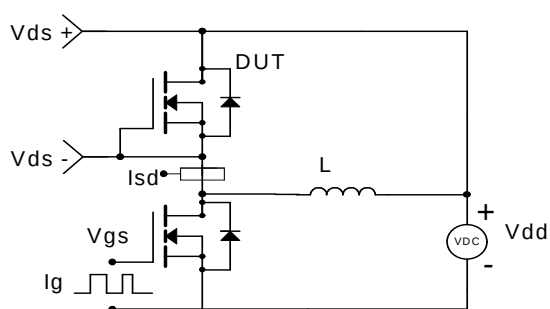
Gate Charge Test Circuit & Waveform



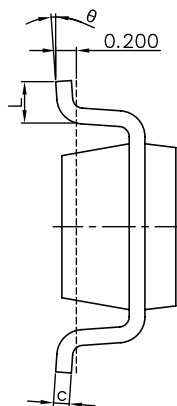
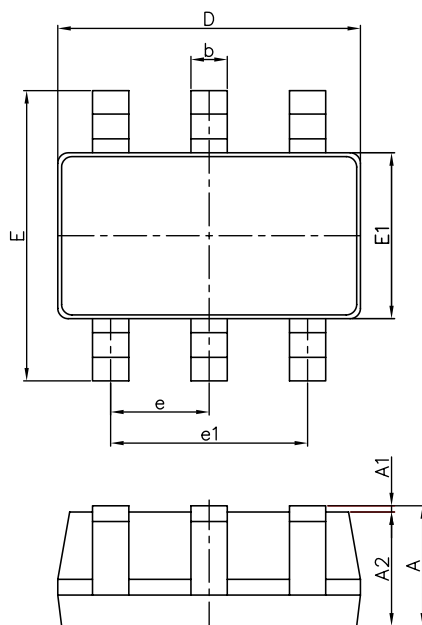
Resistive Switching Test Circuit & Waveforms



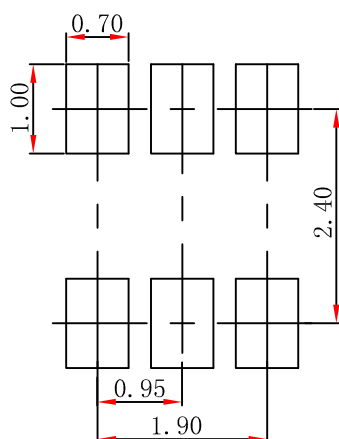
Diode Recovery Test Circuit & Waveforms



SOT-23-6L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.