

• Product Summary

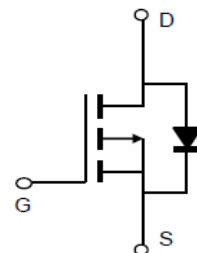
Part #	V_{DS}	$R_{DS(on).typ}$ (@ $V_{GS}=10V$)	$R_{DS(on).typ}$ (@ $V_{GS}=4.5V$)	I_D
EFM095P06F	-60V	9.5m Ω	12m Ω	-80A

• Description

- The EFM095P06F is the high cell density trench
- P-ch MOSFETs, which provide excellent $R_{DS(on)}$
- and gate charge for most of the synchronous buck
- converter applications.
- The EFM095P06F 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



P-Channel MOSFET



DFN5*6- 8L

• Ordering Information:

Part NO.	EFM095P06F
Marking	095P06F ****
Packing Information	REEL TAPE
Basic ordering unit (pcs)	5000

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	-80	A
Drain Current-Pulsed ^(Note 1)	I_{DM}	-320	A
Maximum Power Dissipation	P_D	110	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)	$R_{\theta JA}$	60	$^{\circ}C/W$
---	-----------------	----	---------------

• Static Electrical Characteristics @ $T_J = 25^\circ\text{C}$ (unless otherwise stated)

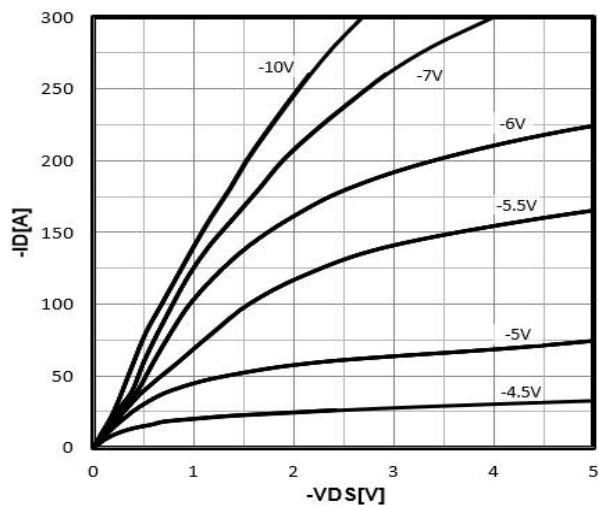
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250uA	-60	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V V _{GS} =0V	--	--	-1	nA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V V _{DS} =0V	--	--	±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250uA	-1.3	-1.8	-2.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V I _D =-20A	--	9.5	11	mΩ
		V _{GS} =-4.5V I _D =-15A	--	12	16	mΩ
Forward Transconductance	g _{FS}	V _{DS} =-5V I _D =-20A	50	--	--	S
Gate Resistance	R _g	F=1.0MHz	--	2	--	Ω
Dynamic Characteristics (Note4)						
Input Capacitance	C _{Iss}	V _{DS} =-30V V _{GS} =0V F=1.0MHz	--	3060	--	PF
Output Capacitance	C _{Oss}		--	620	--	PF
Reverse Transfer Capacitance	C _{rss}		--	20	--	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-30V I _D =-20A V _{GS} =-10V R _G =3Ω,	--	4.5	--	nS
Turn-on Rise Time	t _r		--	2.5	--	nS
Turn-Off Delay Time	t _{d(off)}		--	14.5	--	nS
Turn-Off Fall Time	t _f		--	3.5	--	nS
Total Gate Charge	Q _g	V _{DS} =-30V I _D =-20A V _{GS} =-10V	--	56	--	nC
Gate-Source Charge	Q _{gs}		--	11	--	nC
Gate-Drain Charge	Q _{gd}		--	9	--	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} =0V I _S =-80A	--	--	-1.2	V
Diode Forward Current (Note 2)	I _S		--	--	-80	A

Note :

a¹: Repetitive rating; pulse width limited by maximum junction temperature

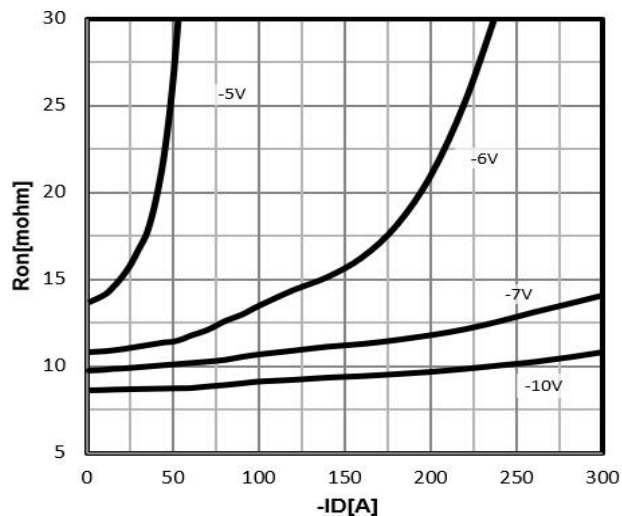
a²: $V_{DD} = 30V$, $L=0.3mH$, $R_G = 25\Omega$, Starting $T_J=25^\circ\text{C}$

• Typical Characteristics



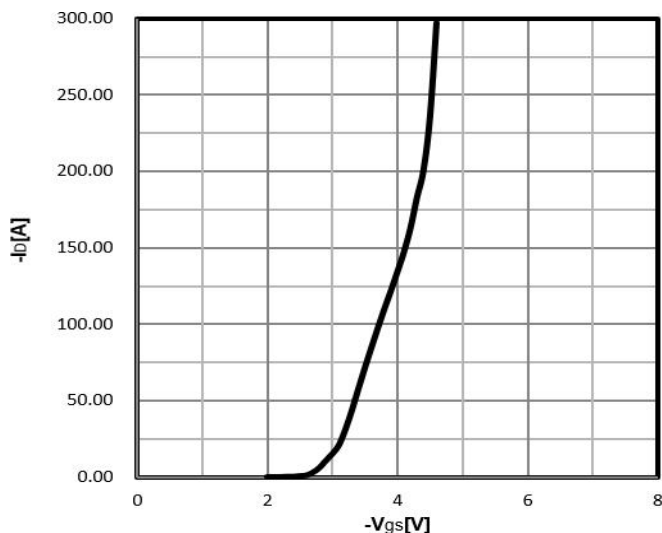
Typ. output characteristics

$$I_D = f(V_{DS})$$



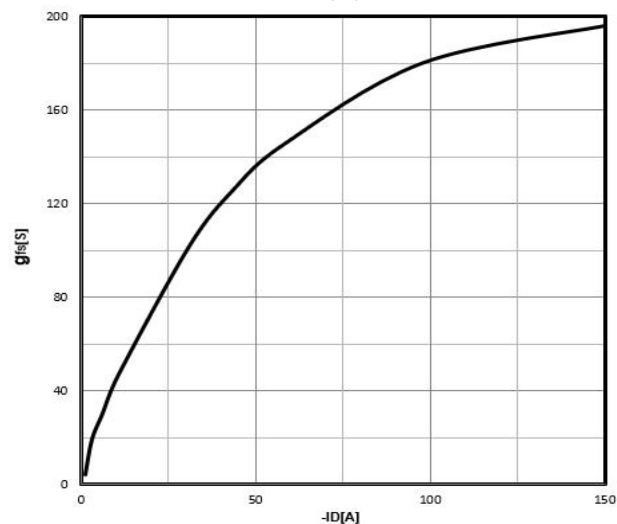
Typ. drain-source on resistance

$$R_{DS(on)} = f(I_D)$$



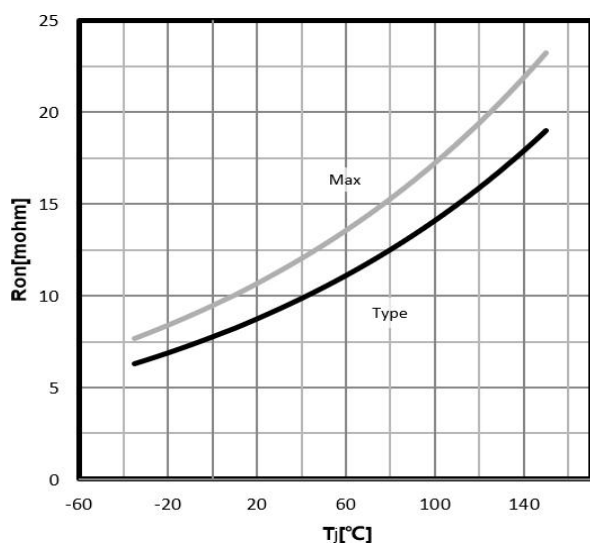
Typ. transfer characteristics

$$I_D = f(V_{GS})$$



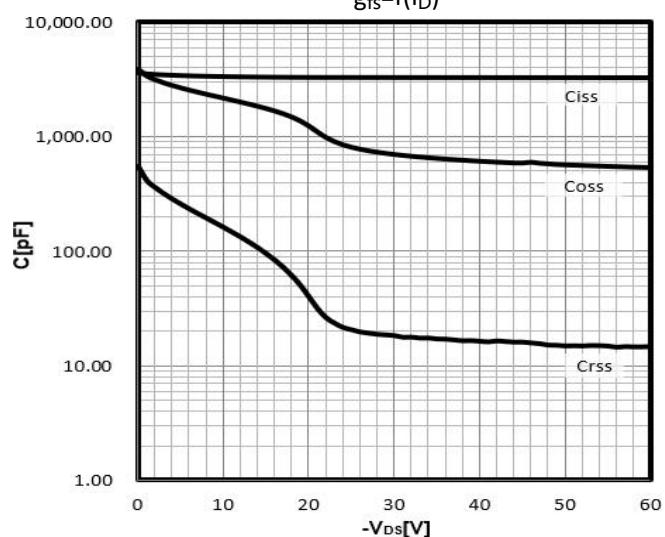
Typ. forward transconductance

$$g_{fs} = f(I_D)$$



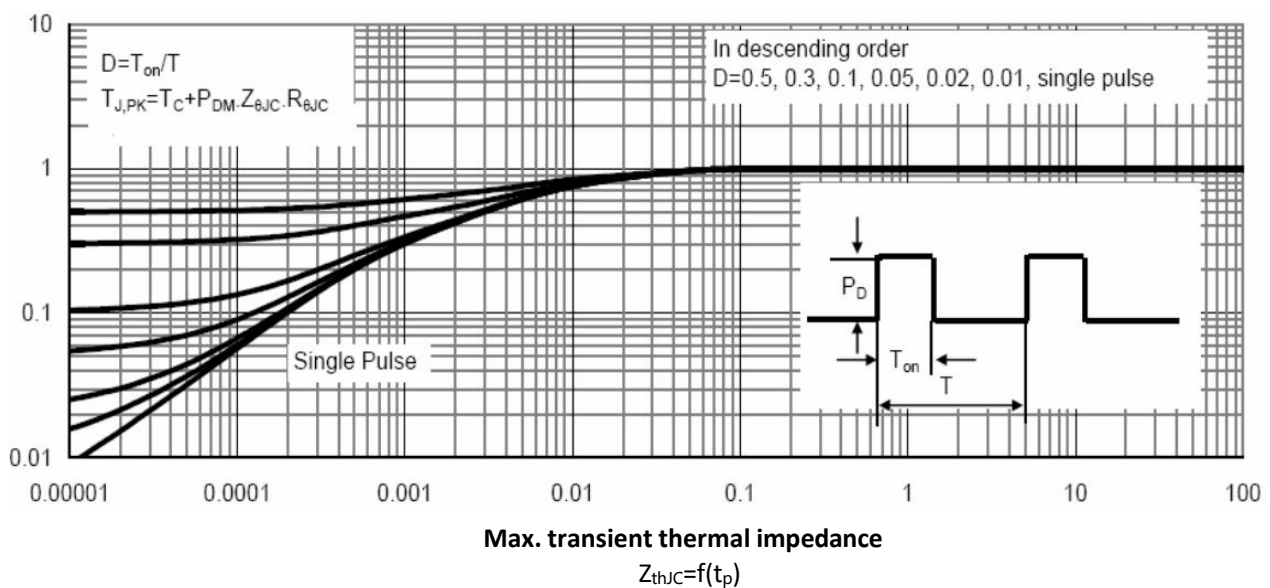
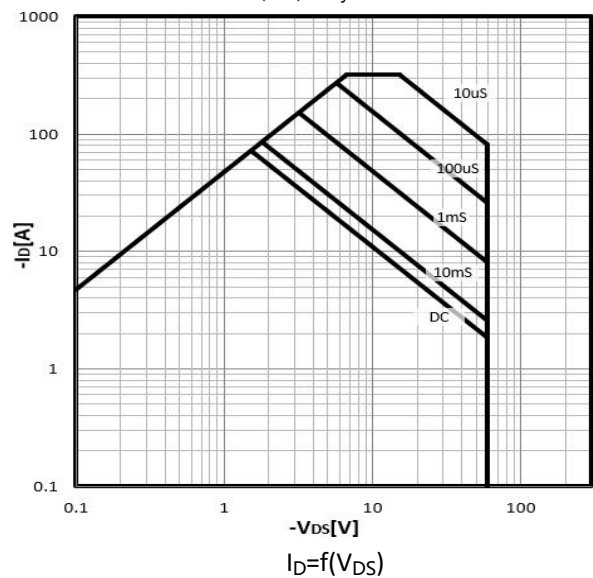
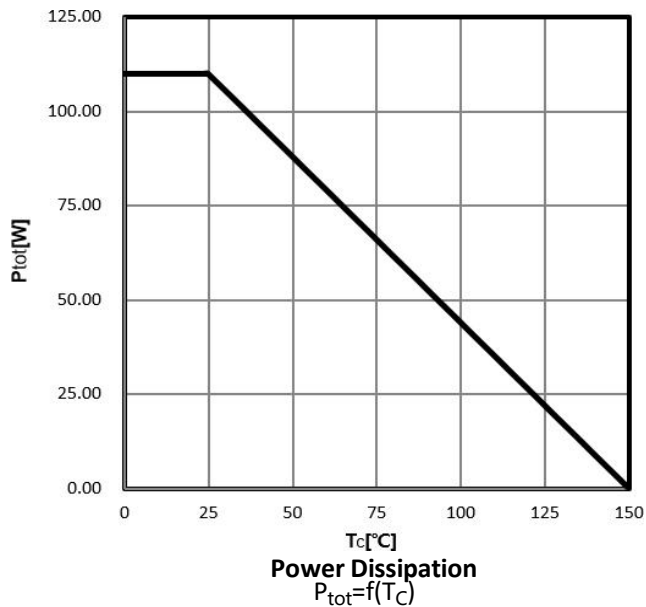
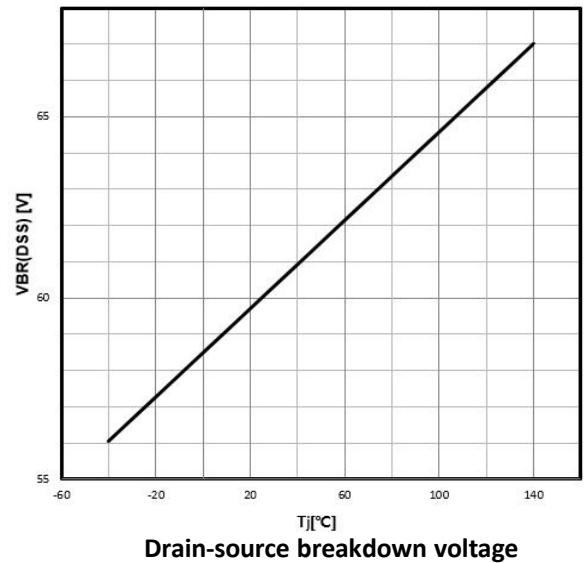
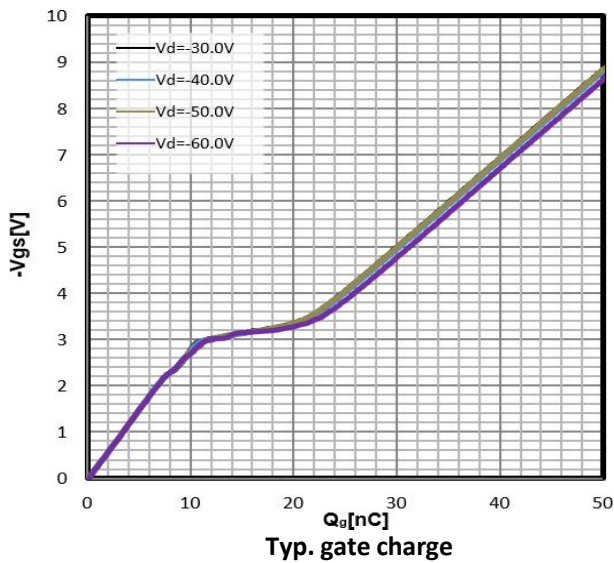
Drain-source on-state resistance

$$R_{DS(on)} = f(T_j); I_D = -20A; V_{GS} = -10V$$

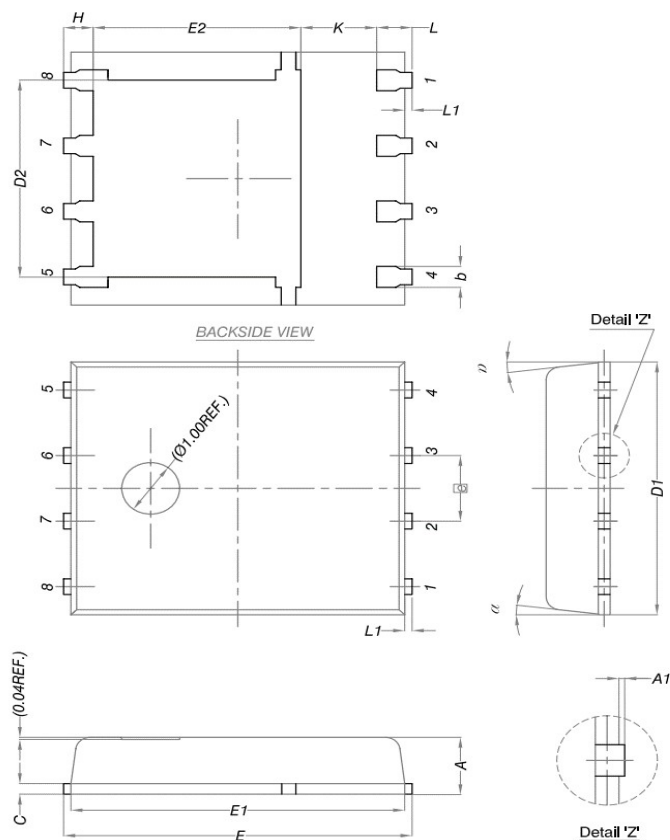


Typ. capacitances

$$C = f(V_{DS}); V_{GS} = 0V; f = 1MHz$$



•DFN5*6 Package Outline



DIM.	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.90	1.00	1.10
A1	0	-	0.05
b	0.33	0.41	0.51
C	0.20	0.25	0.30
D1	4.80	4.90	5.00
D2	3.61	3.81	3.96
E	5.90	6.00	6.10
E1	5.70	5.75	5.80
E2	3.38	3.58	3.78
e	1.27 BSC		
H	0.41	0.51	0.61
K	1.10	-	-
L	0.51	0.61	0.71
L1	0.06	0.13	0.20
α	0°	-	12°