

GENERAL DESCRIPTION

The MEE7298H-G is a N-Channel enhancement mode power field effect transistor, using Force-MOS patented Extended Trench Gate (ETG) technology. This advanced technology is especially tailored to minimize on state resistance and gate charge, and enhance avalanche capability. These devices are particularly suited for medium voltage application such as charger, adapter, notebook computer power management and other lighting dimming powered circuits, and low in-line power loss that are needed in a very small outline surface mount package.

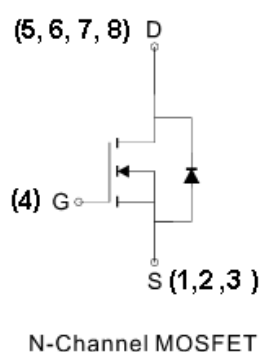
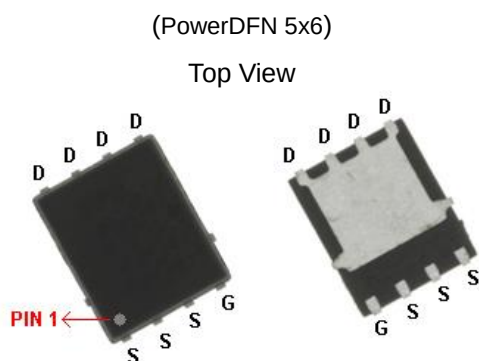
FEATURES

- $R_{DS(ON)} \leq 6.7 \text{ m}\Omega$ (typ.) @ $V_{GS}=10\text{V}$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

APPLICATIONS

- Power Management
- Synchronous Rectification
- Load Switch

PIN CONFIGURATION



! **Ordering Information:** MEE7298H (Pb-free)

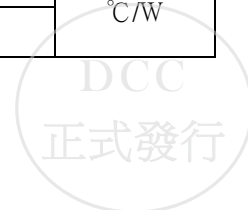
MEE7298H-G (Green product-Halogen free)

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ Unless Otherwise Noted)

Parameter		Symbol	Maximum Ratings	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current*	$T_C=25^\circ\text{C}$	I_D	64	A
	$T_C=70^\circ\text{C}$		51	
	$T_A=25^\circ\text{C}$		13	
	$T_A=70^\circ\text{C}$		10	
Pulsed Drain Current*		I_{DM}	193	A
Maximum Power Dissipation*	$T_C=25^\circ\text{C}$	P_D	69	W
	$T_C=70^\circ\text{C}$		44	
	$T_A=25^\circ\text{C}$		3	
	$T_A=70^\circ\text{C}$		2	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$
Thermal Resistance-Junction to Case*		$R_{\theta JC}$	1.8	$^\circ\text{C/W}$
Junction-to-Ambient Thermal Resistance*		$R_{\theta JA}$	45	

* The device mounted on 1in^2 FR4 board with 2 oz copper

* Chip silicon limitation current is 100A



Electrical Characteristics (TA=25°C Unless Otherwise Specified)

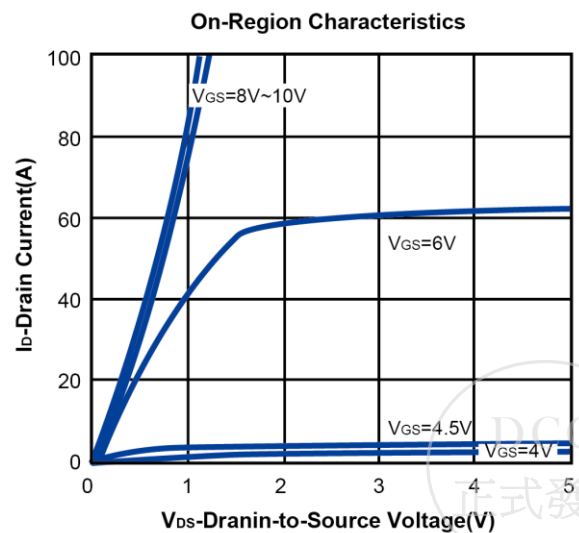
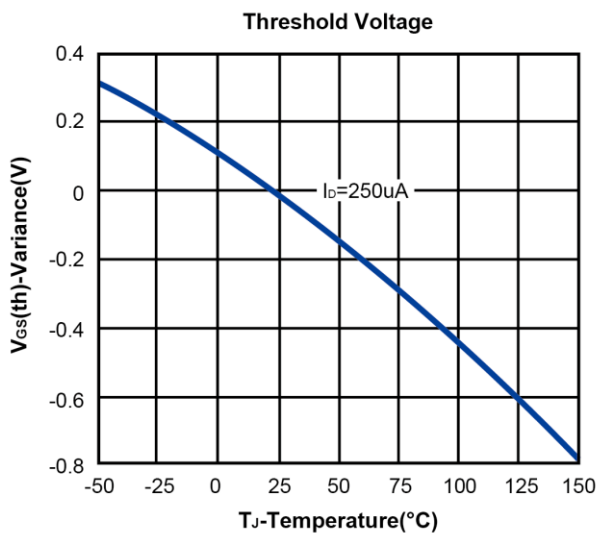
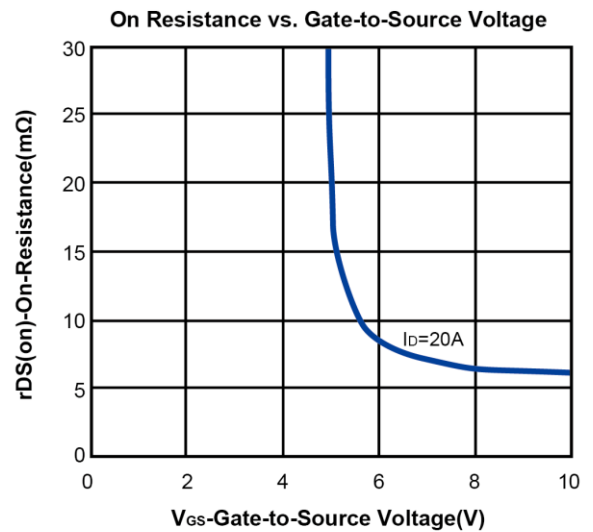
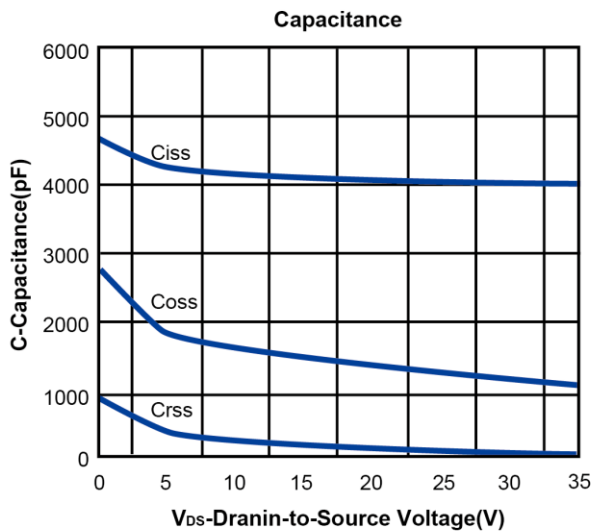
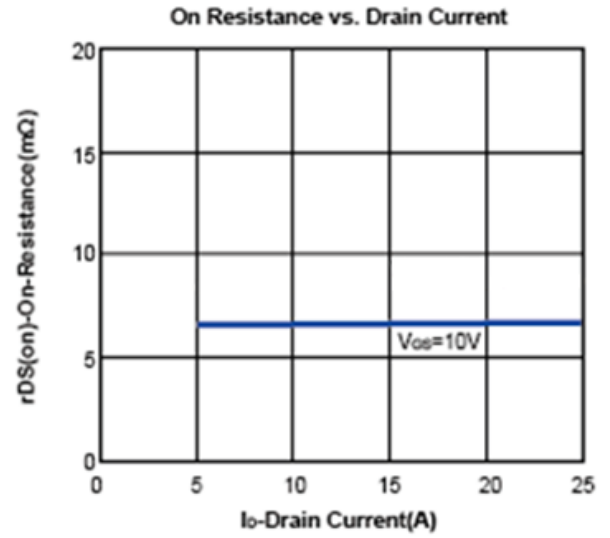
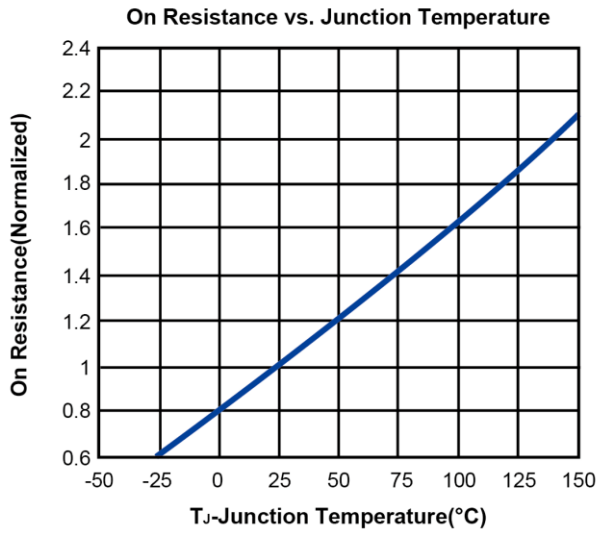
Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	100			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250 μ A	2		4	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} = $\pm$ 20V			$\pm$ 100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =100V, V _{GS} =0V			1	μ A
R _{DS(ON)}	Drain-Source On-State Resistance ^a	V _{GS} =10V, I _D =20A		6.7	8	m Ω
V _{SD}	Diode Forward Voltage	I _S =1A, V _{GS} =0V			1	V
DYNAMIC						
Q _g	Total Gate Charge	V _{DS} =50V, V _{GS} =10V, I _D =20A		67.4		nC
Q _{gs}	Gate-Source Charge			19.8		
Q _{gd}	Gate-Drain Charge			16.6		
C _{iss}	Input capacitance	V _{DS} =30V, V _{GS} =0V, f=1.0MHz		3961		pF
C _{oss}	Output Capacitance			1141		
C _{rss}	Reverse Transfer Capacitance			59		
t _{d(on)}	Turn-On Delay Time	V _{DS} =50V, R _L =2.5 Ω V _{GS} =10V, R _G =6 Ω I _D =20A		36.6		ns
t _r	Turn-On Rise Time			134.3		
t _{d(off)}	Turn-Off Delay Time			63.5		
t _f	Turn-Off Fall Time			135.5		

Notes: a. Pulse test: pulse width $\leq$ 300 μ s, duty cycle $\leq$ 2%, Guaranteed by design, not subject to production testing.

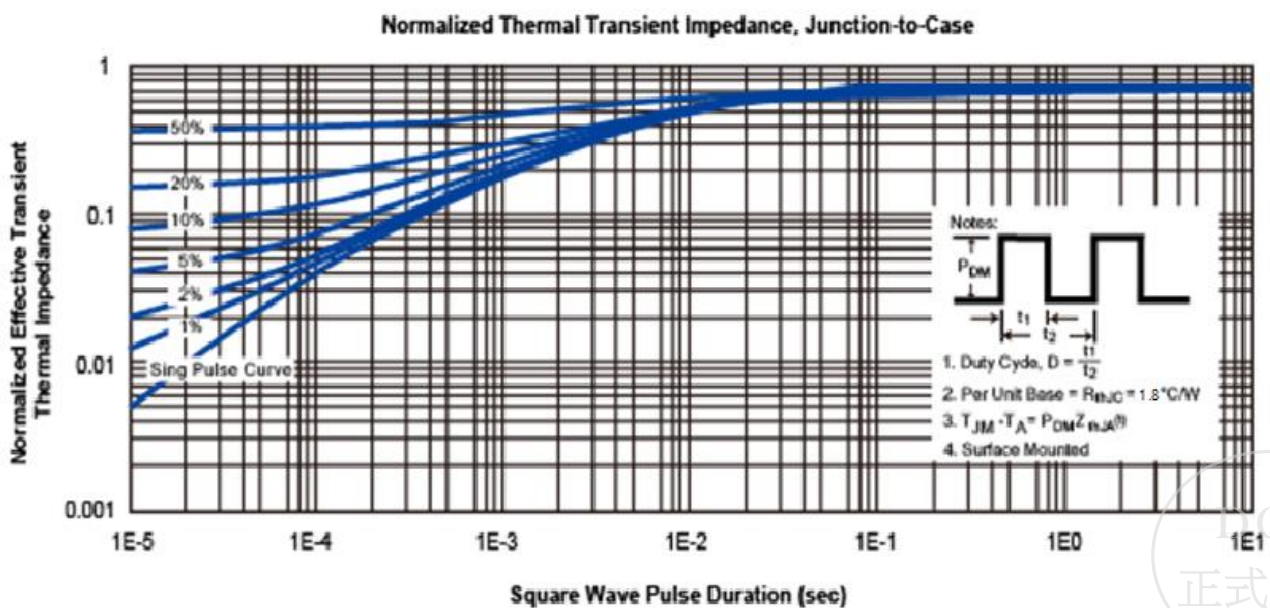
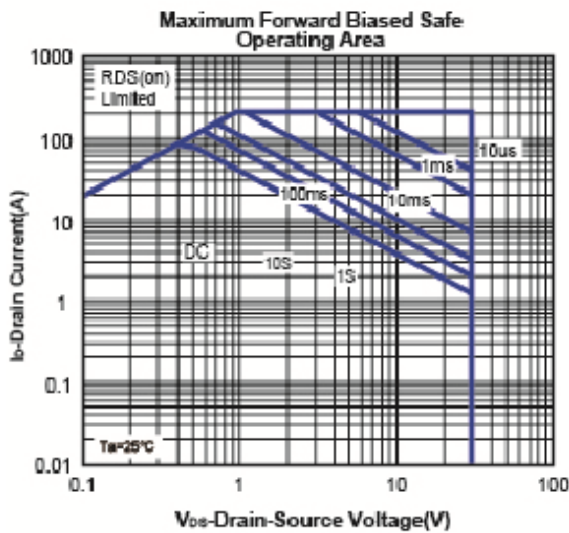
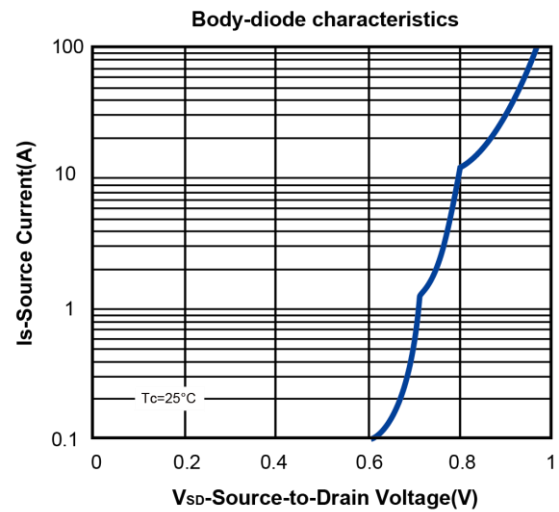
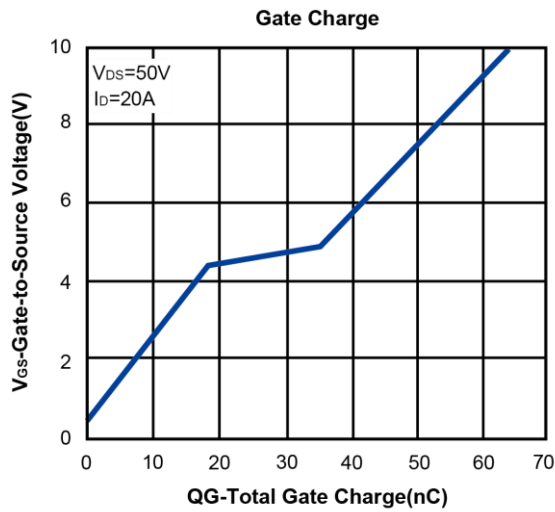
b. Force mos reserves the right to improve or change product design, functions, reliability, qualified manufacturer without notice.



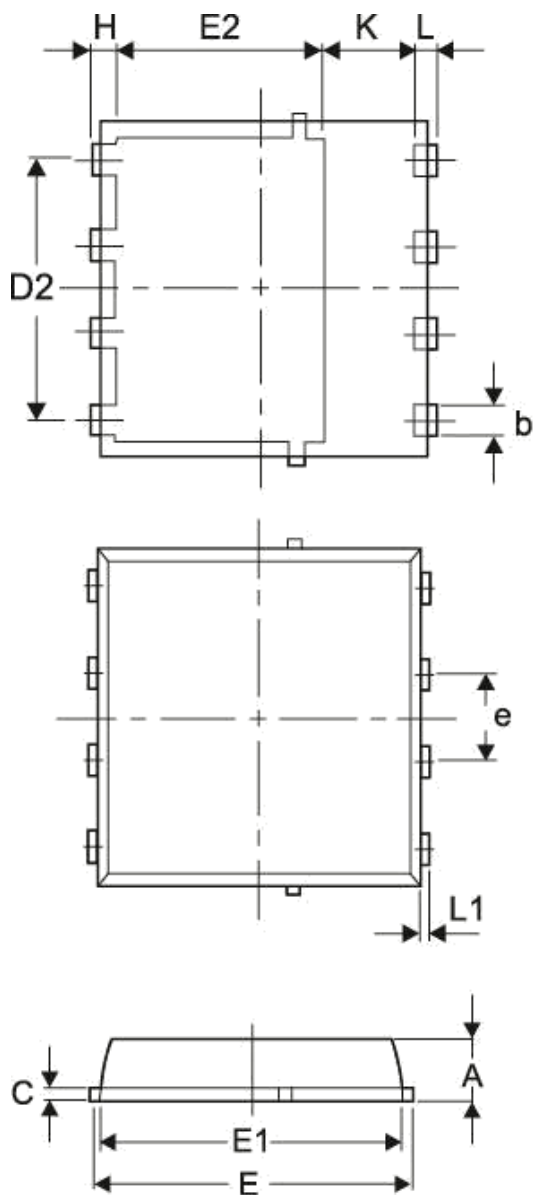
Typical Characteristics (T_J =25°C Noted)



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Power PAK 5x6 Package Outline



SYMBOL	MILLIMETERS (mm)		
	MIN	TYP	MAX
A	0.90	1.1	1.20
b	0.33	0.4	0.51
C	0.155	0.2	0.30
D1	4.80	5	5.20
D2	3.61	3.8	3.96
E	5.8	6	6.20
E1	5.6	5.8	5.90
E2	3.35	3.8	4.31
e	1.27 BSC		
H	0.35	0.5	0.7
K	1.20	-	-
L	0.35	0.5	0.71
L1	0.05	0.15	0.30

