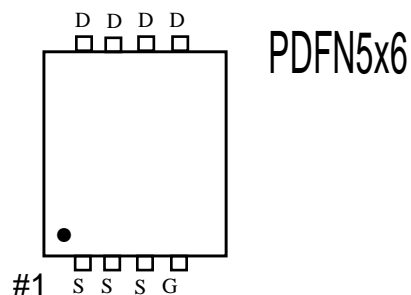


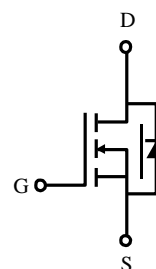
N-Channel High Density Trench MOSFET

Features:

- Super high dense cell trench design for low $R_{DS(on)}$.
- Rugged and reliable.
- Surface Mount package.



PRODUCT SUMMARY		
$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	1.7m Ω	110



ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

PARAMETERS TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source voltage		V_{GS}	± 20	V
Continuous Drain current	$T_C = 25\text{ }^\circ\text{C}$	I_D	110	A
	$T_C = 100\text{ }^\circ\text{C}$		70	
Pulsed Drain Current ¹		I_{DM}	300	
Avalanche Current		I_{AS}	38	
Avalanche Energy	$L=0.1\text{mH}$	E_{AS}	97	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	56	W
	$T_C = 100\text{ }^\circ\text{C}$		22	
Operating junction & Storage Temperature Range		T_s T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		2.6	$^\circ\text{C}$
Junction-to-Ambient	$R_{\theta JA}$		58	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.6	2.5	
Gate-Body Leakage	I _{GSS}	V _{DS} =0V, V _{GS} =± V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0 V			1	μA
		V _{DS} =20V, V _{GS} =0V, T _J =125 °C			30	
Drain-Source On- State Resistance ¹	R _{DS(ON)}	V _{GS} =4.5V, I _D =20A		2.0	2.9	mΩ
		V _{GS} =10V, I _D =40A		1.7	2.4	
Forward Trans conductance ¹	g _{fs}	V _{DS} =5V, I _D =13A		22		S

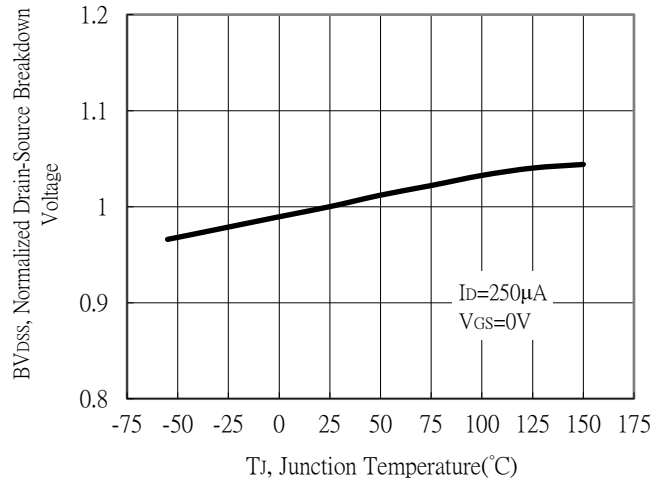
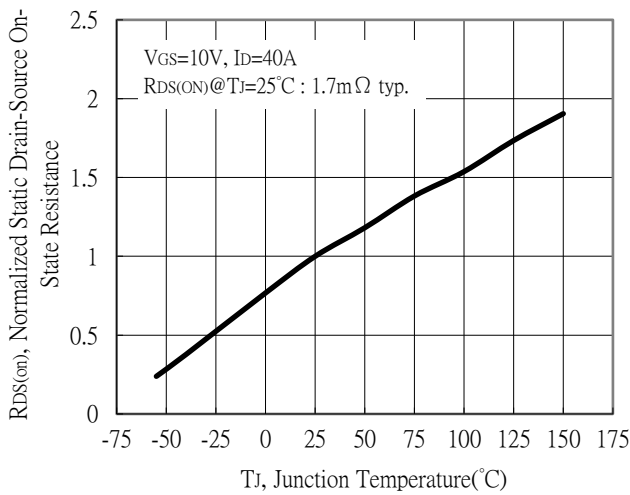
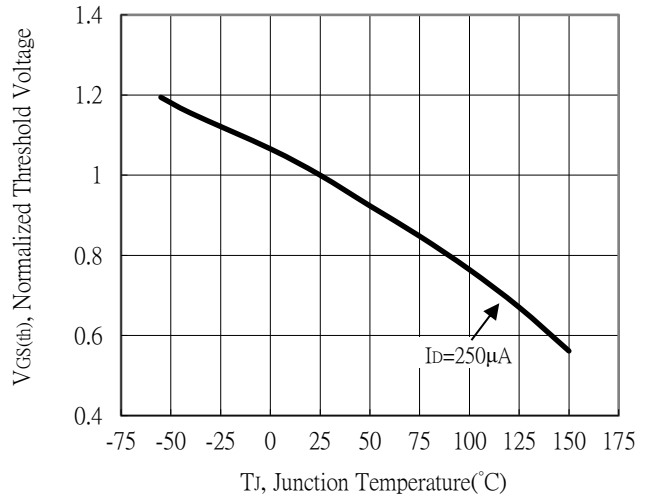
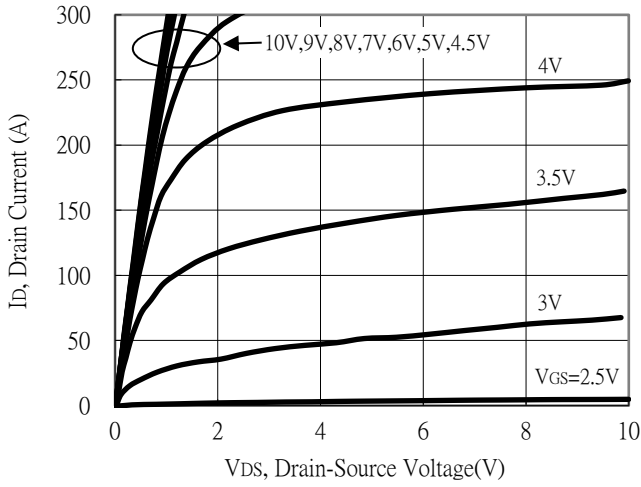
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz		2960		pF
Output Capacitance	C _{oss}			286		
Reverse Transfer Capacitance	C _{rss}			234		
Gate Resistance	R _G	V _{GS} =0V, f=1MHz		3.1		Ω
Total Gate Charge ²	Q _{g(vgs=10V)}	V _{DS} =15V (BR) _{DSS} , I _D = 20A		47		nC
	Q _{g(vgs=4.5V)}			24		
Gate Source Charge ²	Q _{gS(VGS=10V)}			3.6		
	Q _{gS(VGS=4.5V)}			2.7		
Gate-Drain Charge ²	Q _{gd(VGS=10V)}			15		
	Q _{gd(VGS=4.5V)}			8		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} =15V, R _L =1.5Ω I _D =20A, V _{GS} =10V, R _{GS} =6Ω		12		nS
Rise Time ²	t _r			21		
Turn-Off Delay Time ²	t _{d(off)}			7		
Fall Time ²	t _f			10		

SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS(T_J=25°C)

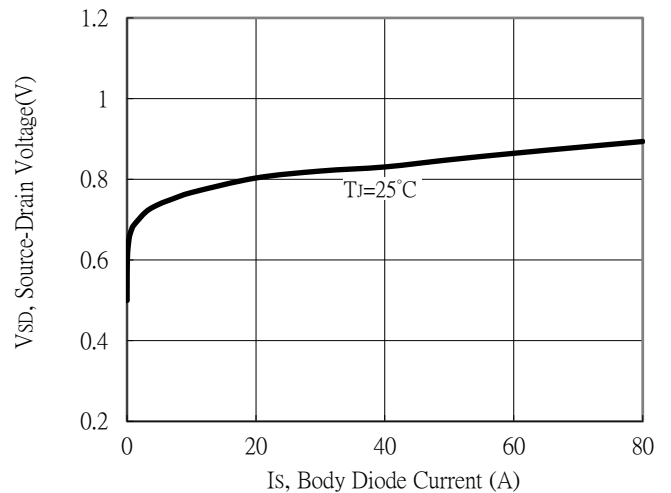
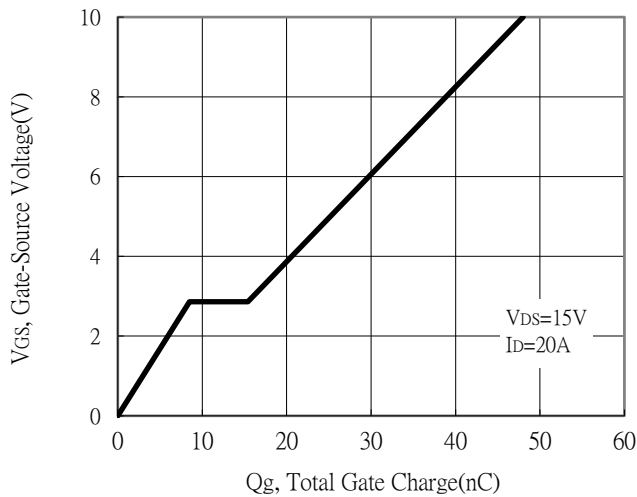
Continuous Current	I _S			38		A
Forward Voltage ¹	V _{SD}	I _F =I _S , V _{GS} =0V		0.8	1.2	V
Reverse Recovery Time	T _{rr}	I _F =20V, dI _F /dt=100A/μs		27		nS
Reverse Recovery Charge	Q _{rr}			19		nC

Note
 b. Pulse Test Pulse width ≤ 300usec , Duty Cycle ≤ 2% .
 c. Independent of operating production testing .

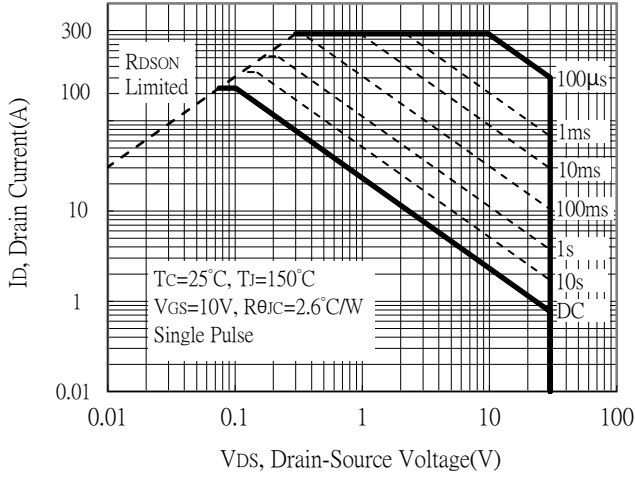
Typical Output Characteristics



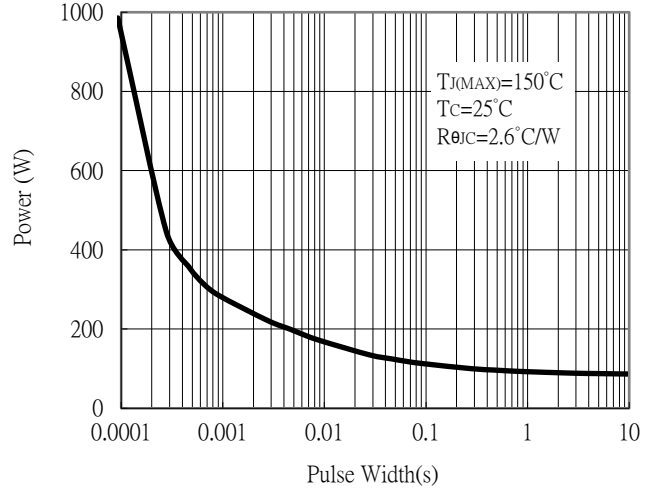
Gate Charge Characteristics



Maximum Safe Operating Area



Single Pulse Power Rating, Junction to Ambient



Transient Thermal Response Curves

