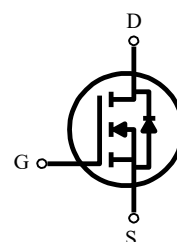
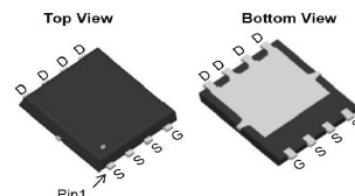


N-channel Enhancement Mode Power MOSFET

FEATURES

- Advanced Split Gate Trench Technology
- Excellent RDS(ON) and Low Gate Charge
- 100% UIS TESTED!
- 100% ΔV_{ds} TESTED!

PDFN5x6



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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current-Continuous	$T_c=25^\circ\text{C}$	I_D	125	A
	$T_c=100^\circ\text{C}$		75	A
Drain Current-Continuous ¹		I_{DM}	500	A
Single Pulsed Avalanche Energy ²		E_{AS}	306	mJ
Maximum Power Dissipation	$T_C=25^\circ\text{C}$	P_D	133	W
Junction & Storage Temperature Range		T_J, T_{STG}	- 55 to 150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Parameter	Symbol	Typ.	Unit
Thermal Resistance, Junction to Case	R_{thJC}	0.94	$^\circ\text{C/W}$

Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2.EAS condition: Starting $T_J=25^\circ\text{C}$, $V_{DD}=50\text{V}$, $V_G=10\text{V}$, $R_G=25\text{ohm}$, $L=0.5\text{mH}$, $I_{AS}=35\text{A}$

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V , I _D = 250uA	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 100V , V _{GS} = 0V			1.0	uA
Gate-Body Leakage	I _{GSS}	V _{GS} = ±20V , V _{DS} = 0V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	2.5	2.9	3.5	V
Drain-Source On-State Resistance ³	R _{DS(on)}	V _{GS} = 10V , I _D = 30A		3.6	4.7	mΩ
DYNAMIC CHARACTERISTICS ⁴						
Input Capacitance	C _{ISS}	V _{DS} = 50V , V _{GS} = 0V f = 1.0MHz		2767		pF
Output Capacitance	C _{OSS}			1383		pF
Reverse Transfer Capacitance	C _{RSS}			23		pF
Total Gate Charge	Q _g	V _{GS} = 0 to 10V V _{DS} = 50V, I _D = 30A		74		nC
Gate-Source Charge	Q _{gs}			28		nC
Gate Drain("Miller") Charge	Q _{gd}			20		nC
SWITCHING CHARACTERISTICS ⁴						
Turn-On Delay Time	t _{D(ON)}	V _{GS} = 10V, V _{DD} = 50V I _D = 30A, R _{GEN} = 3Ω		16		ns
Rise Time	t _r			35		ns
Turn-Off Delay Time	t _{D(OFF)}			50		ns
Fall Time	t _f			30		ns
Drain-Source Diode Characteristics and Max Ratings						
Drain to Source Diode Forward Current	I _S				125	A
Drain to Source Diode Forward Current	I _{SM}				500	A
Drain to Source Diode Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = 30A			1.2	V
Body Diode Reverse Recovery Time	t _{rr}	I _F = 15A, di/dt = 100A/us		31		nS
Body Diode Reverse Recovery Charge	Q _{rr}			48		vC

Notes: 3.Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycles $\leq 0.5\%$.

4. Defined by design, not subject to production.

Typical Performance Characteristics

Figure 1: Output Characteristics

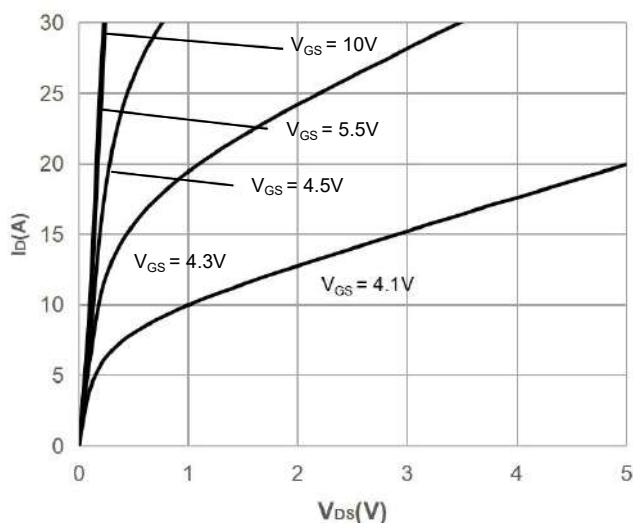


Figure 2: Typical Transfer Characteristics

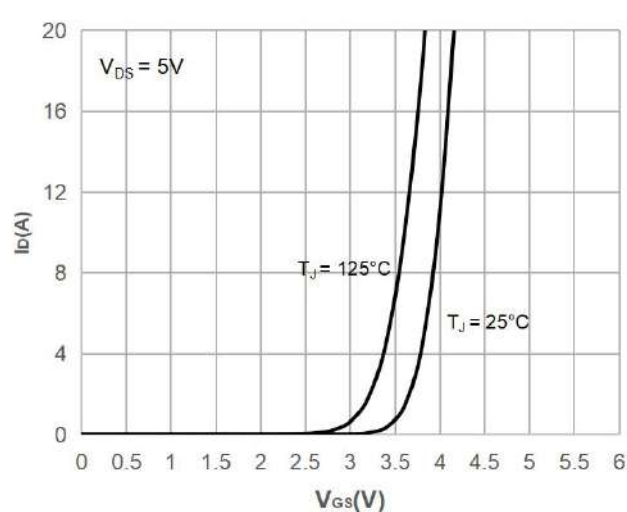


Figure 3: On-resistance vs. Drain Current

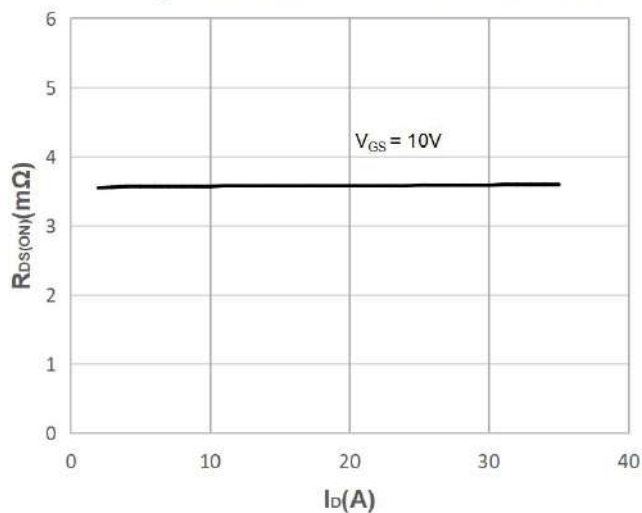


Figure 4: Body Diode Characteristics

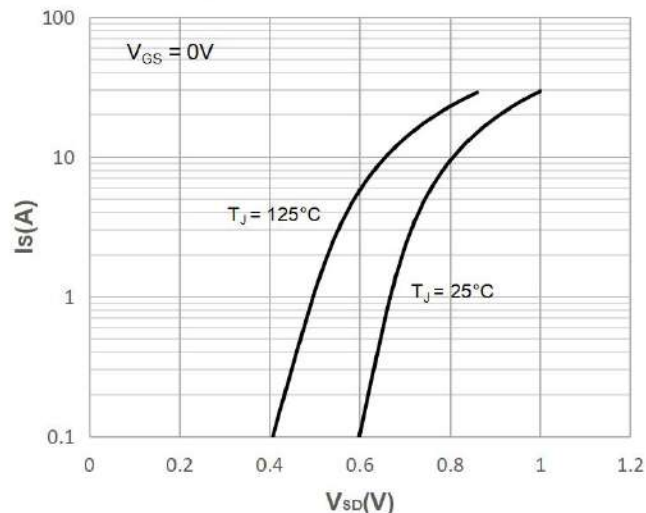


Figure 5: Gate Charge Characteristics

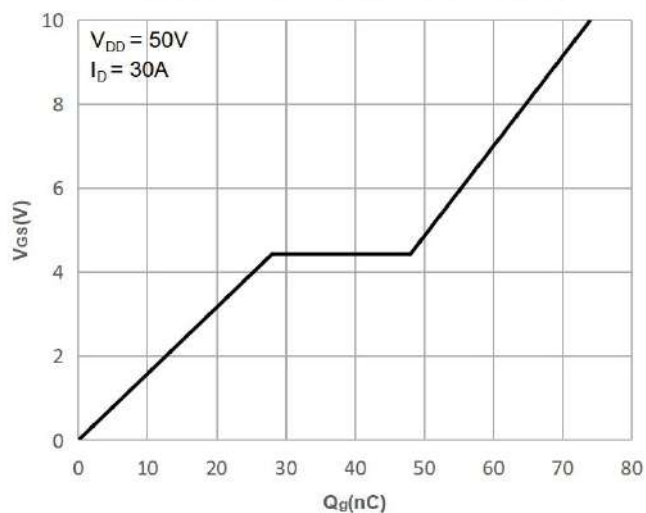
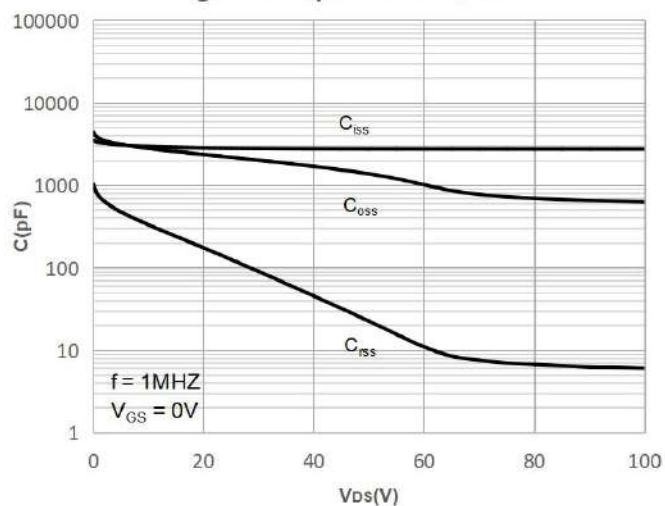


Figure 6: Capacitance Characteristics



Typical Performance Characteristics

Figure 7: Normalized Breakdown voltage vs. Junction Temperature

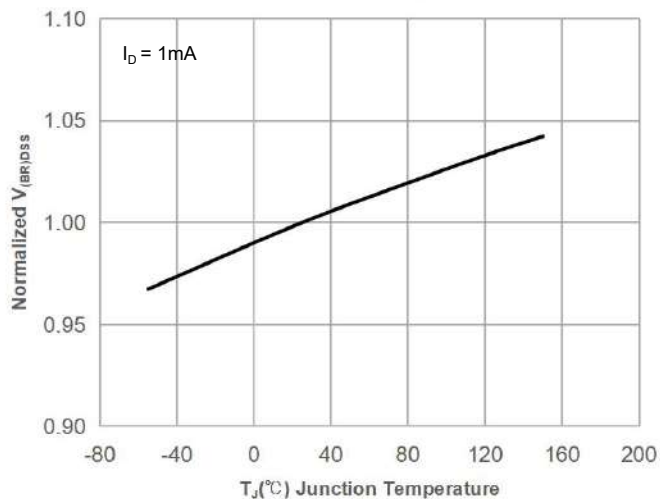


Figure 8: Normalized on Resistance vs. Junction Temperature

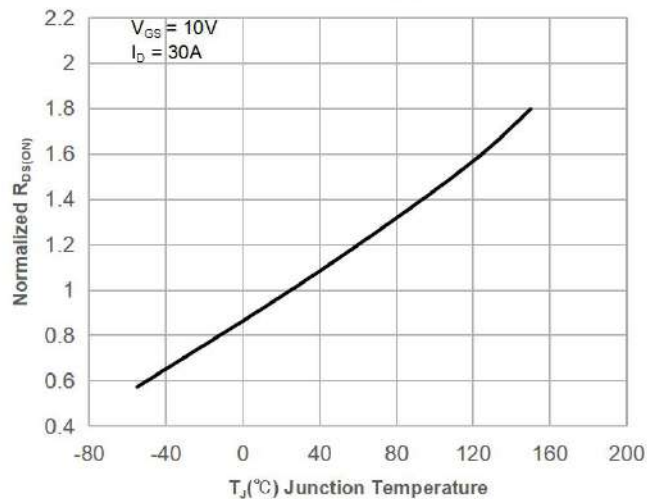


Figure 9: Maximum Safe Operating Area

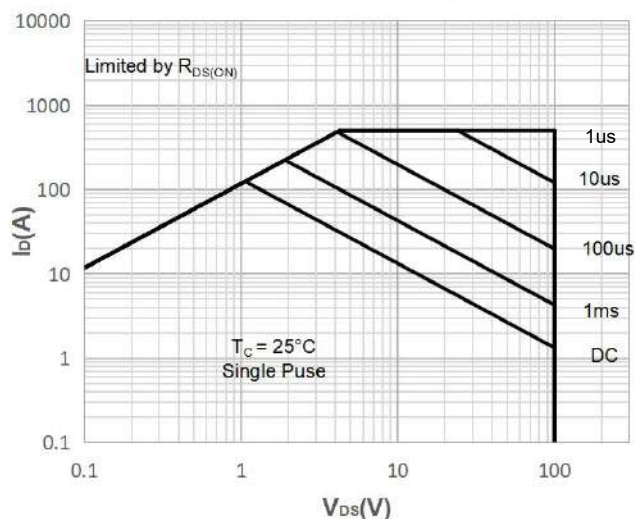


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

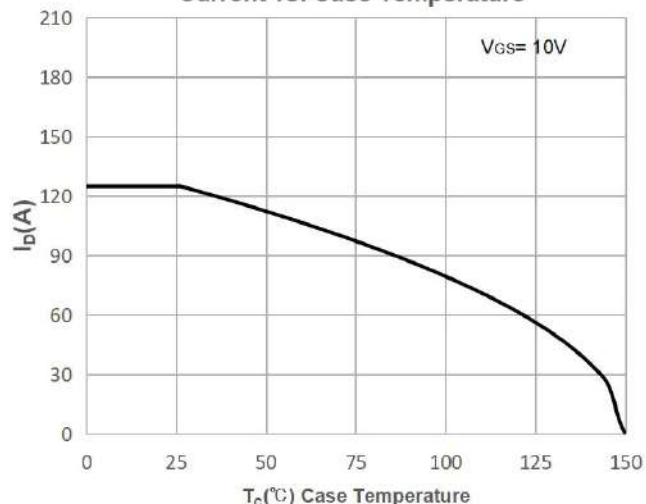


Figure 11: Normalized Maximum Transient Thermal Impedance

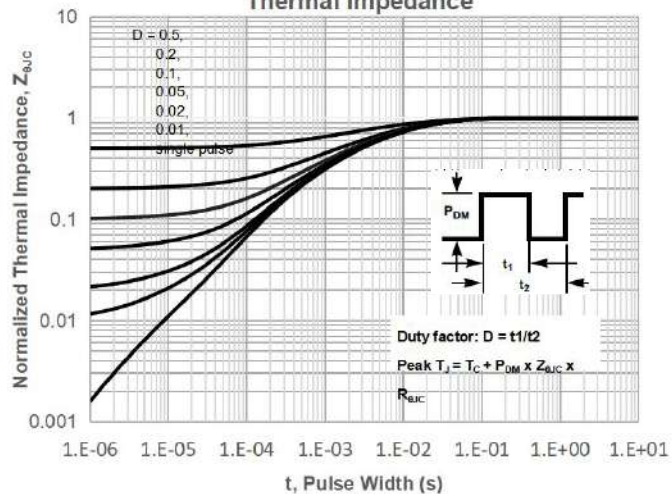


Figure 12: Peak Current Capacity

