

N-Channel 900-V (D-S) MOSFET

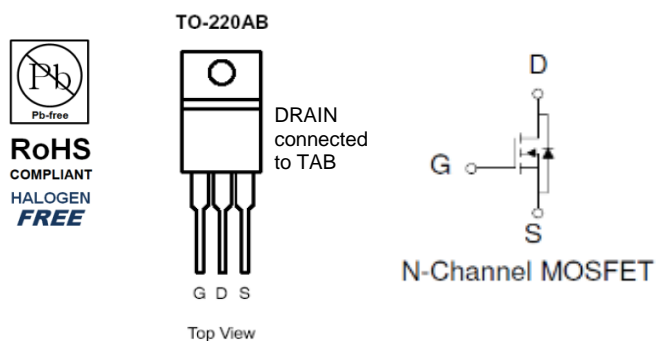
Key Features:

- Low $r_{DS(on)}$ trench technology
- Low thermal impedance
- Fast switching speed

Typical Applications:

- Power Supplies
- Motor Drives
- Consumer Electronics

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (m Ω)	I_D (A)
900	600 @ $V_{GS} = 10V$	16



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Limit	Units
Drain-Source Voltage		V_{DS}	900	V
Gate-Source Voltage		V_{GS}	± 30	
Continuous Drain Current ^a	$T_C = 25^\circ\text{C}$	I_D	16	A
Pulsed Drain Current ^b		I_{DM}	64	
Continuous Source Current (Diode Conduction) ^a	$T_C = 25^\circ\text{C}$	I_S	16	A
Power Dissipation ^a	$T_C = 25^\circ\text{C}$	P_D	300	W
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 175	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Maximum	Units
Maximum Junction-to-Ambient ^c	$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
Maximum Junction-to-Case	$R_{\theta JC}$	0.5	

Notes

- Package Limited
- Pulse width limited by maximum junction temperature
- Surface Mounted on 1" x 1" FR4 Board.

Electrical Characteristics

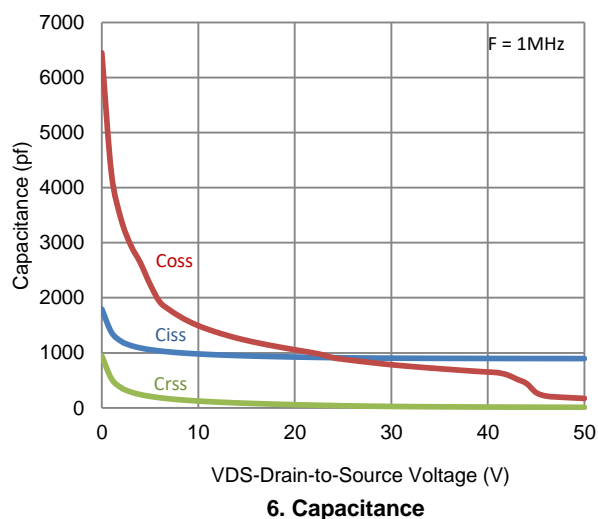
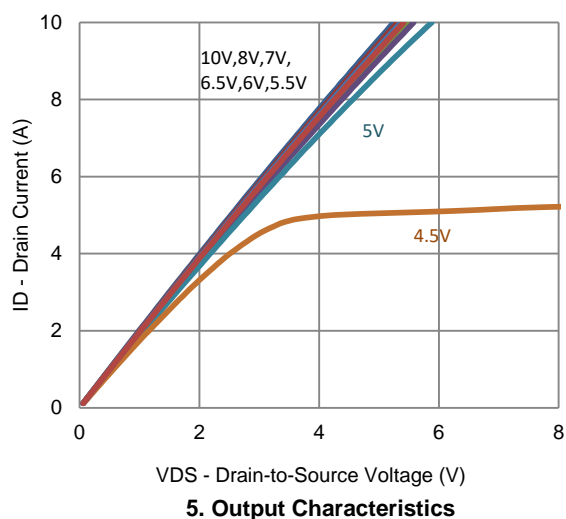
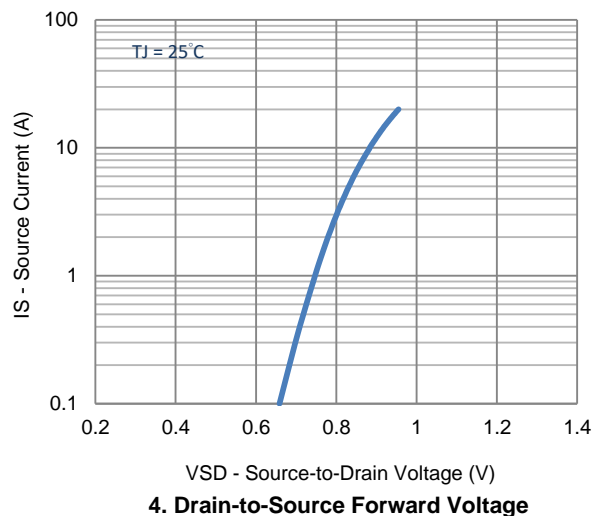
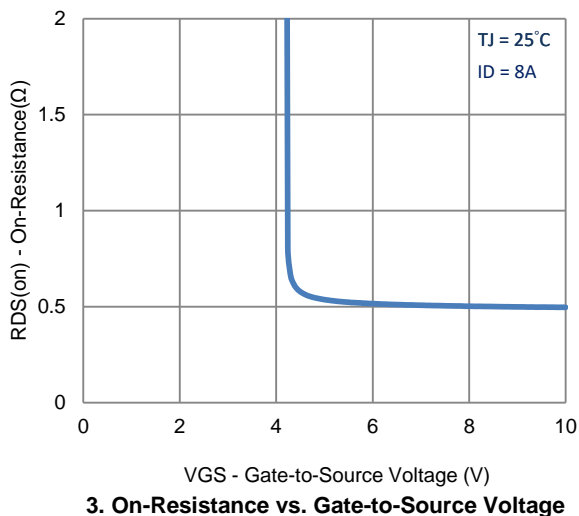
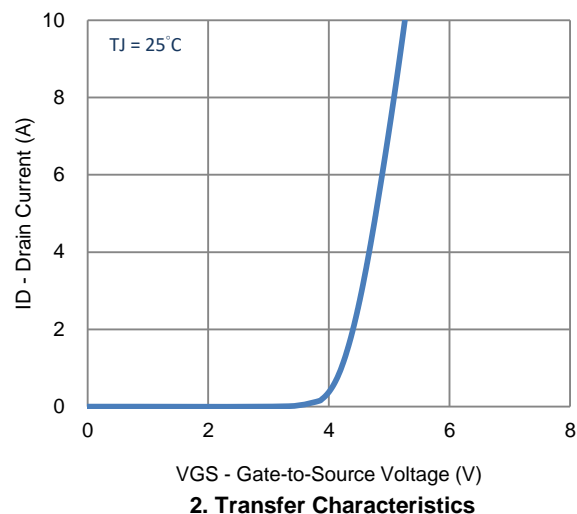
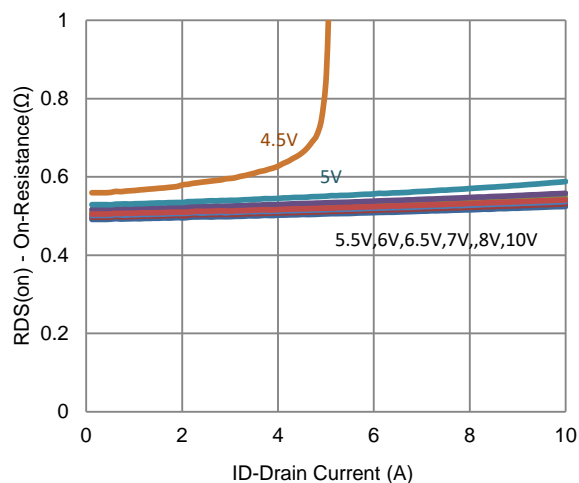
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \text{ uA}$	1			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 30 \text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 720 \text{ V}, V_{GS} = 0 \text{ V}$			1	uA
		$V_{DS} = 720 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 55^\circ\text{C}$			10	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = 5 \text{ V}, V_{GS} = 10 \text{ V}$	25			A
Drain-Source On-Resistance ^a	$r_{DS(on)}$	$V_{GS} = 10 \text{ V}, I_D = 8 \text{ A}$			600	mΩ
Forward Transconductance ^a	g_{fs}	$V_{DS} = 50 \text{ V}, I_D = 8 \text{ A}$		10		S
Diode Forward Voltage ^a	V_{SD}	$I_S = 8 \text{ A}, V_{GS} = 0 \text{ V}$		0.87		V
Dynamic ^b						
Total Gate Charge	Q_g	$V_{DS} = 450 \text{ V}, V_{GS} = 10 \text{ V}, I_D = 8 \text{ A}$		23		nC
Gate-Source Charge	Q_{gs}			5.4		
Gate-Drain Charge	Q_{gd}			8.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = 450 \text{ V}, R_L = 56.3 \text{ } \Omega, I_D = 8 \text{ A}, V_{GEN} = 10 \text{ V}, R_{GEN} = 6 \text{ } \Omega$		13		ns
Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(off)}$			55		
Fall Time	t_f			62		
Input Capacitance	C_{iss}	$V_{DS} = 50, V_{GS} = 0 \text{ V}, f = 1 \text{ Mhz}$		896		pF
Output Capacitance	C_{oss}			173		
Reverse Transfer Capacitance	C_{rss}			11		

Notes

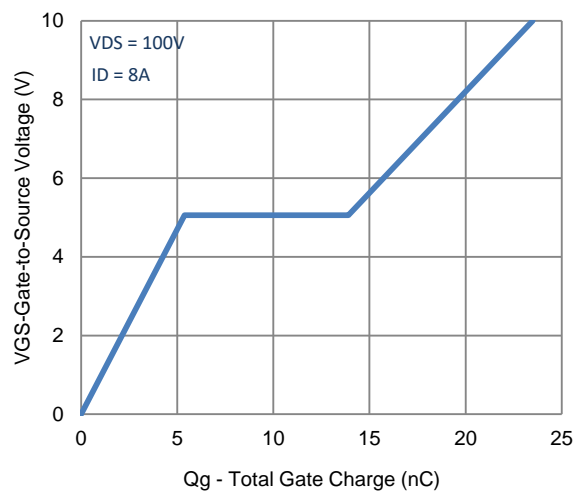
- a. Pulse test: PW ≤ 300us duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

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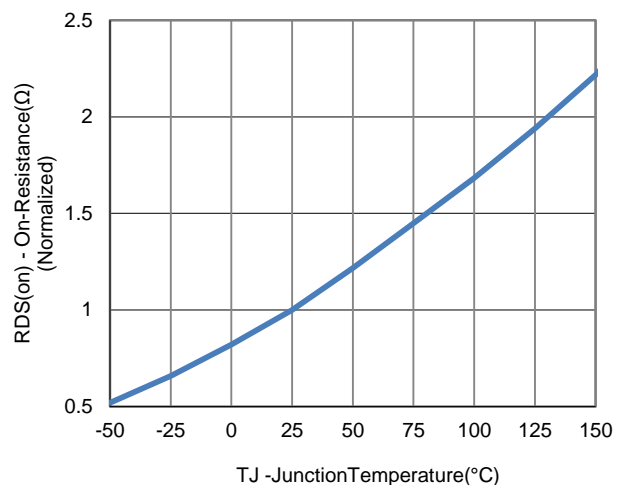
Typical Electrical Characteristics



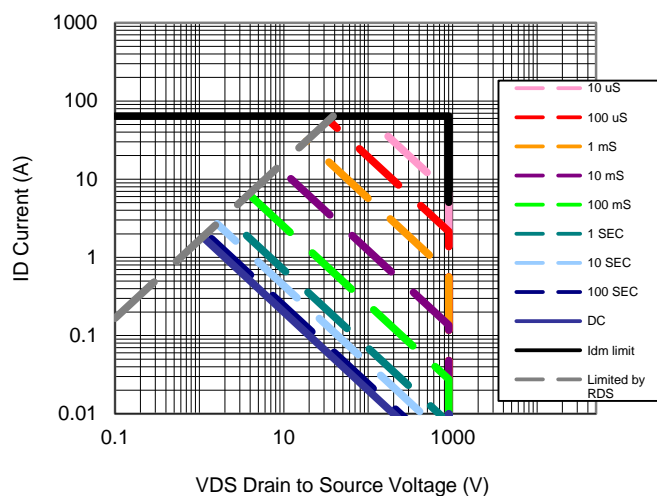
Typical Electrical Characteristics



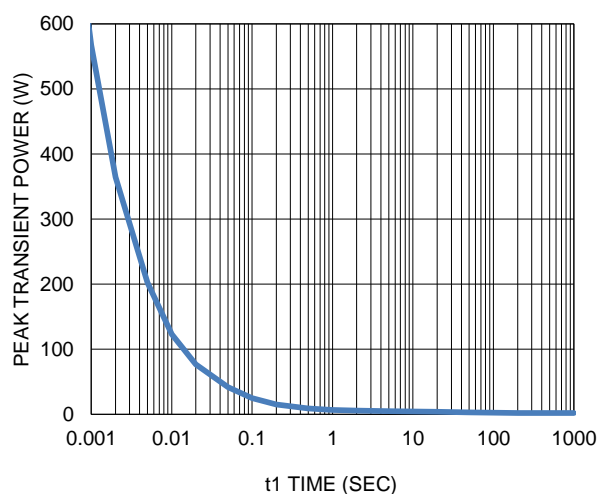
7. Gate Charge



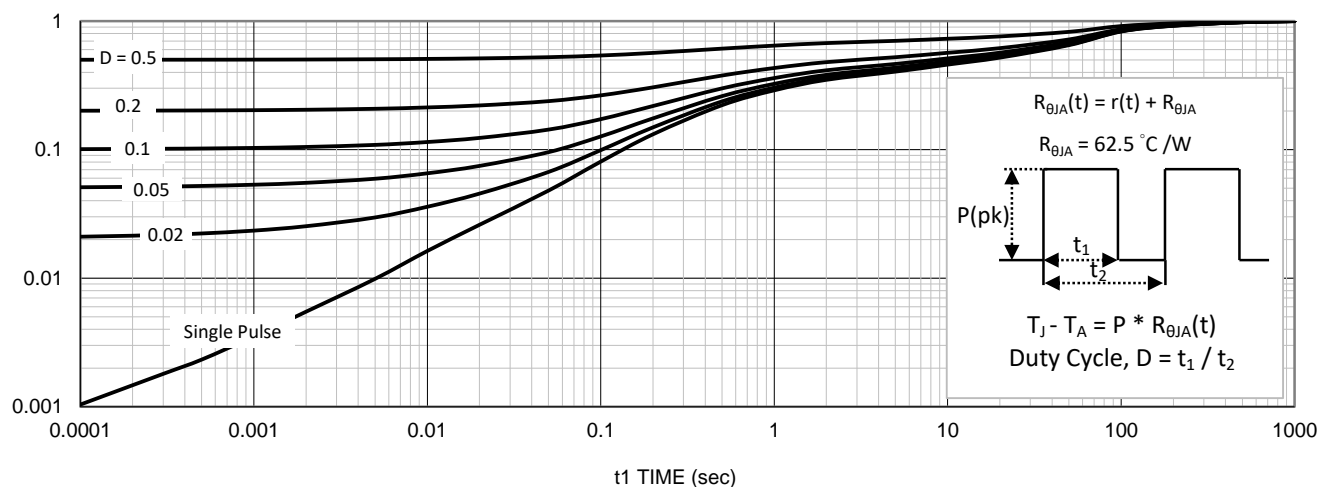
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area

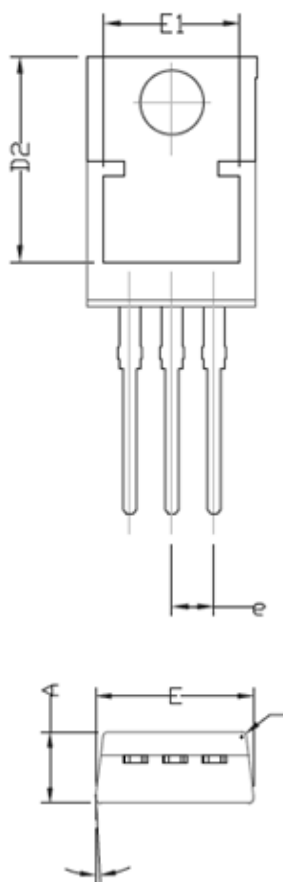
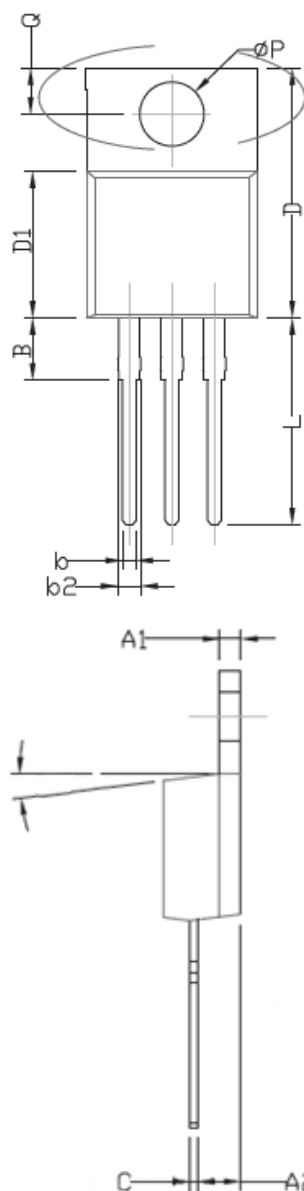


10. Single Pulse Maximum Power Dissipation

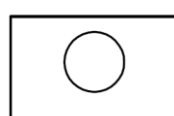


11. Normalized Thermal Transient Junction to Ambient

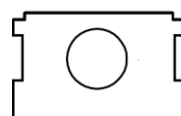
Package Information



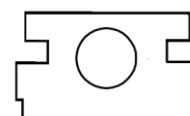
DIM.	MILLIMETERS	
	MIN	MAX
A	4.24	4.72
A1	1.11	1.41
A2	2.22	2.7
B	2.6	3.9
b	0.66	0.94
b2	1.17	1.45
c	0.4	0.6
D	14.5	15.74
D1	8.4	9.65
D2	12.08	12.48
E	9.7	10.54
E1	8	8.4
e	2.49	2.59
L	12.27	14.5
ØP	3.55	3.89
Q	2.58	2.98



Option 1



Option 2



Option 3

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