

N-Channel 200-V (D-S) MOSFET

Key Features:

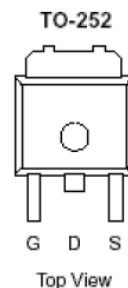
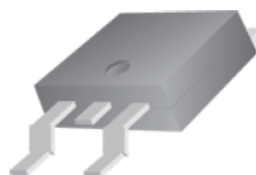
- Low $r_{DS(on)}$ trench technology
- Low thermal impedance
- Fast switching speed

Typical Applications:

- White LED boost converters
- Automotive Systems
- Industrial DC/DC Conversion Circuits



RoHS
COMPLIANT
HALOGEN
FREE



PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (m Ω)	I_D (A)
200	600 @ $V_{GS} = 10V$	7.5
	750 @ $V_{GS} = 4.5V$	6.7

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Limit	Units
Drain-Source Voltage		V_{DS}	200	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ^a	$T_C = 25^\circ C$	I_D	7.5	A
Pulsed Drain Current ^b		I_{DM}	30	
Continuous Source Current (Diode Conduction) ^a		I_S	40	A
Power Dissipation ^a	$T_C = 25^\circ C$	P_D	50	W
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 175	$^\circ C$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	$R_{\theta JA}$	40	$^\circ C/W$
Maximum Junction-to-Case	$R_{\theta JC}$	3	

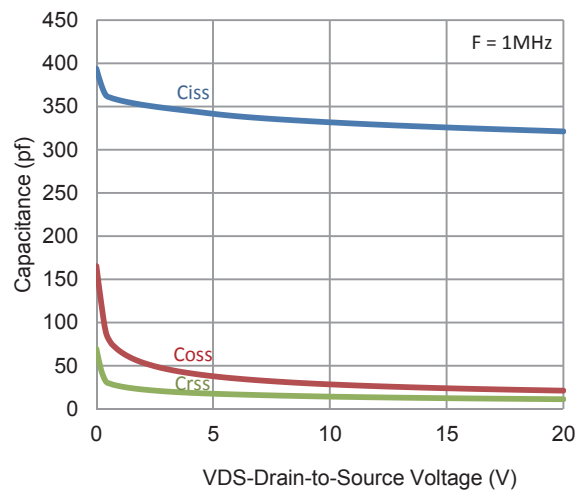
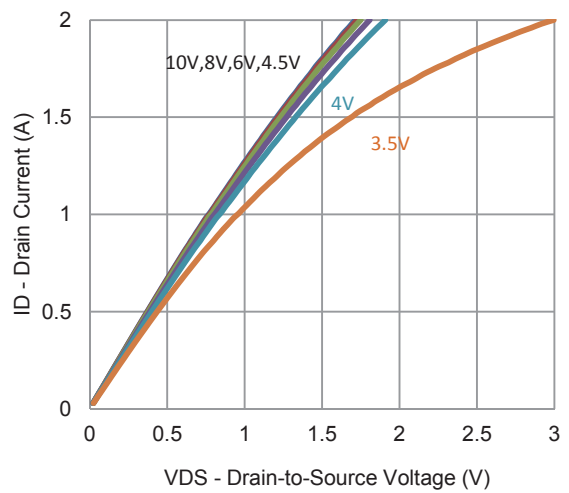
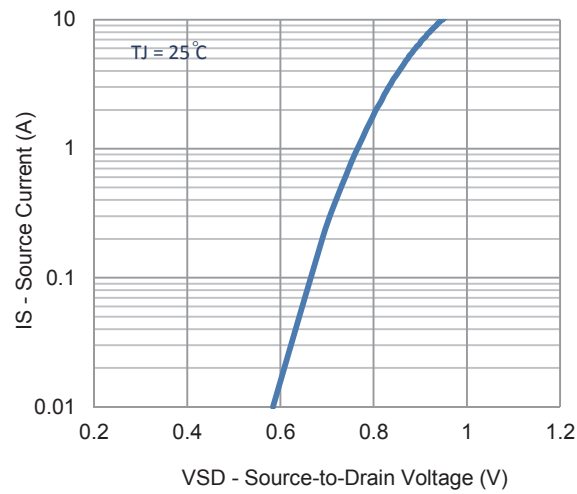
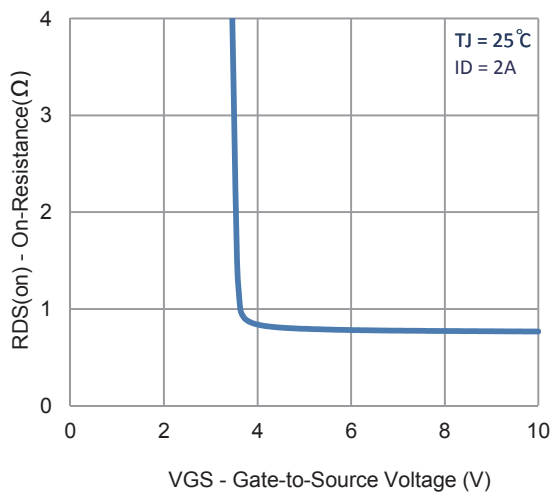
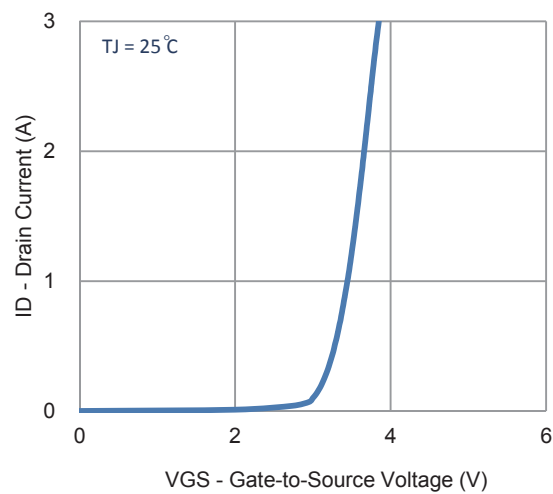
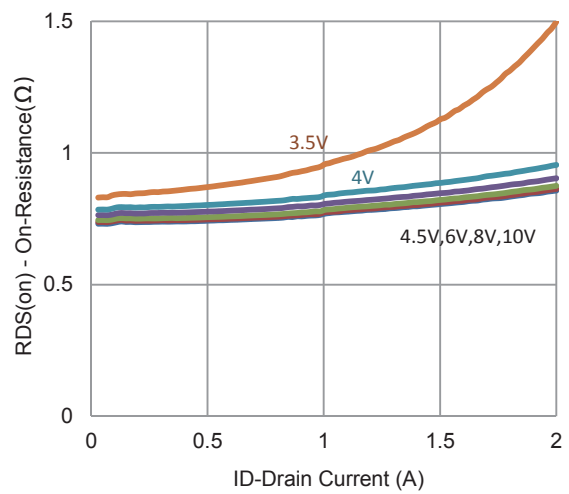
Notes

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

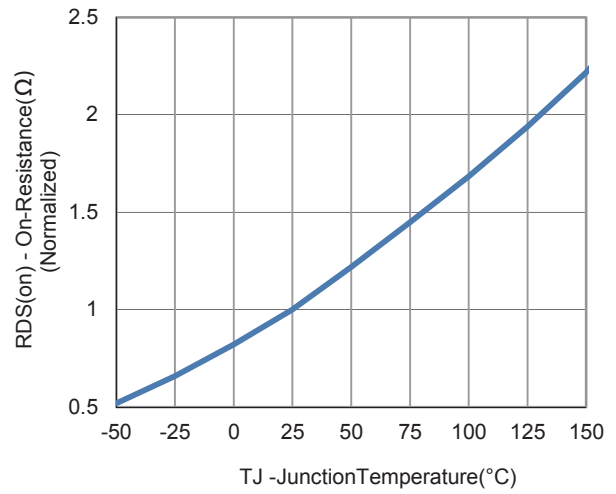
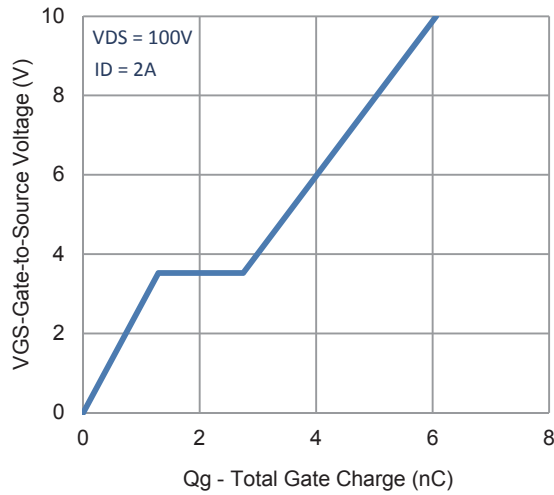
Electrical Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	1			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 V, V_{GS} = \pm 20 V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 160 V, V_{GS} = 0 V$			1	μA
		$V_{DS} = 160 V, V_{GS} = 0 V, T_J = 55^\circ C$			25	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = 5 V, V_{GS} = 10 V$	12			A
Drain-Source On-Resistance ^a	$r_{DS(on)}$	$V_{GS} = 10 V, I_D = 2 A$			600	m Ω
		$V_{GS} = 4.5 V, I_D = 1.6 A$			750	
Forward Transconductance ^a	g_{fs}	$V_{DS} = 15 V, I_D = 2 A$		16		S
Diode Forward Voltage ^a	V_{SD}	$I_S = 20 A, V_{GS} = 0 V$		0.9		V
Dynamic ^b						
Total Gate Charge	Q_g	$V_{DS} = 100 V, V_{GS} = 4.5 V,$ $I_D = 2 A$		3.2		nC
Gate-Source Charge	Q_{gs}			1.3		
Gate-Drain Charge	Q_{gd}			1.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = 100 V, R_L = 50 \Omega, I_D = 2 A,$ $V_{GEN} = 10 V, R_{GEN} = 6 \Omega$		5		ns
Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(off)}$			13		
Fall Time	t_f			5		
Input Capacitance	C_{iss}	$V_{DS} = 15 V, V_{GS} = 0 V, f = 1 Mhz$		325		pF
Output Capacitance	C_{oss}			23		
Reverse Transfer Capacitance	C_{rss}			12		

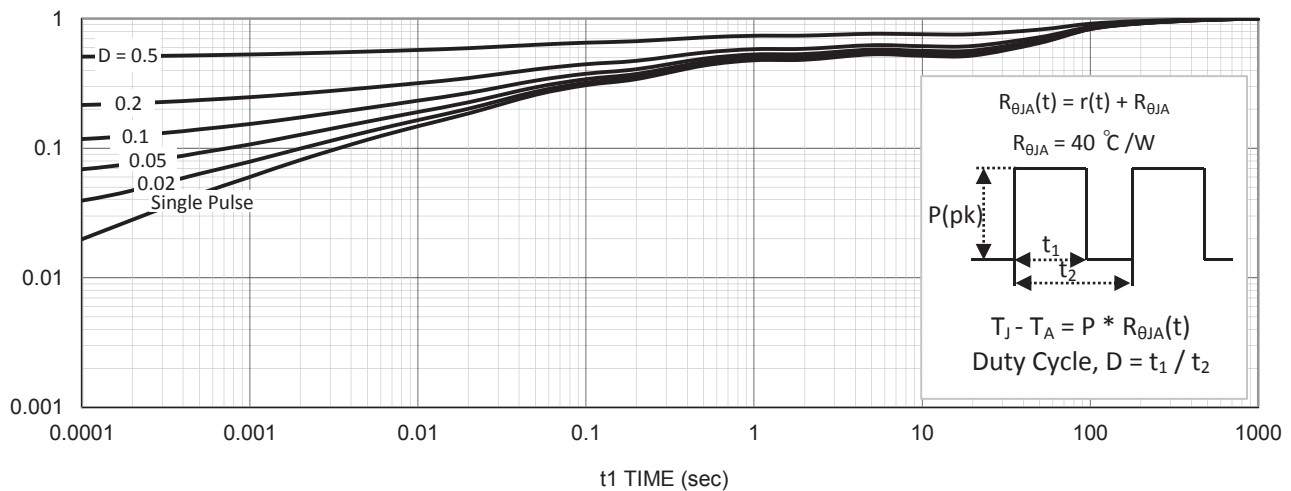
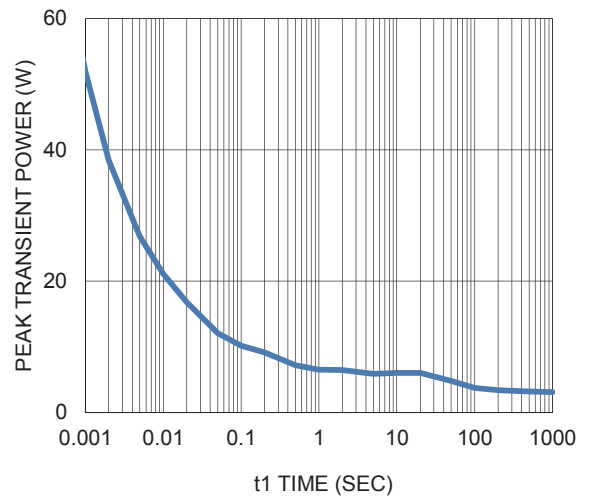
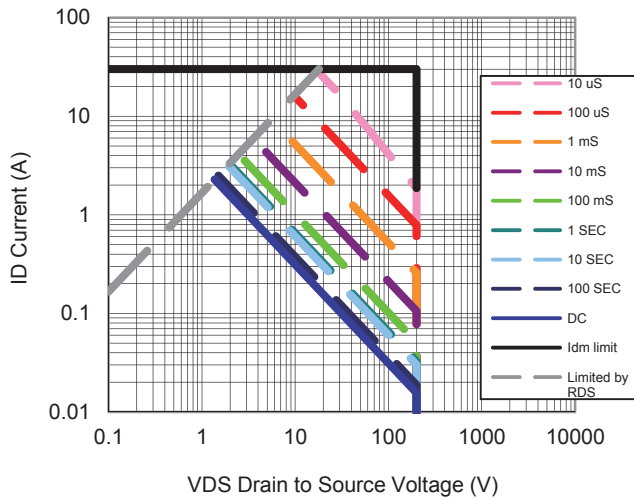
Typical Electrical Characteristics



Typical Electrical Characteristics



8. Normalized On-Resistance Vs Junction Temperature



11. Normalized Thermal Transient Junction to Ambient