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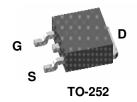
200V N-Channel PowerTrench[®] MOSFET

General Description

This N-Channel MOSFET has been designed specifically to improve the overall efficiency of DC/DC converters using either synchronous or conventional switching PWM controllers.

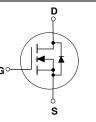
These MOSFET's feature faster switching and lower gate charge than other MOSFET's with comparable $\mathsf{RDS}_{(\mathsf{ON})}$ specifications.

The result is a MOSFET that is easy and safer to drive (even at very high frequencies), and DC/DC power supply designs with higher overall efficiency.



Features

- 3.6 A, 200 V. $R_{DS(ON)}$ = 130 m Ω @ V_{GS} = 10 V
- Low gate charge
- Fas t switching speed
- High performance trench technology for extremely low $R_{\text{DS}(\text{ON})}$
- High power and current handling capability



Absolute Maximum Ratings TA=25°C unless otherwise noted

Symbol	Parameter		Ratings	Units
V _{DSS}	Drain-Source Voltage		200	V
V _{GSS}	Gate-Source Voltage		±20	V
ID	Drain Current – Continuous	(Note 1)	3.6	A
	Drain Current – Pulsed		20	
PD	Maximum Power Dissipation @ $T_c = 25^{\circ}C$	(Note 1)	70	W
	@ T _A = 25°C	(Note 1a)	3.2	
	@ T _A = 25°C	(Note 1b)	1.3	
dv/dt	Peak Diode Recovery dv/dt	(Note 3)	3.2	V/ns
T _J , T _{STG}	Operating and Storage Junction Temperatu	re Range	-55 to +150	°C

R _{eJC} I	Thermal Resistance, Junction-to-Case	(Note 1)	1.8	°C/W
R _{0JA} T	Thermal Resistance, Junction-to-Ambient	(Note 1b)	96	°C/W

Package Marking and Ordering Information

Device Marking	Device	Reel Size	Tape width	Quantity
FDD2670	FDD2670	13"	16mm	2500 units

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Publication Order Number: FDD2670/D

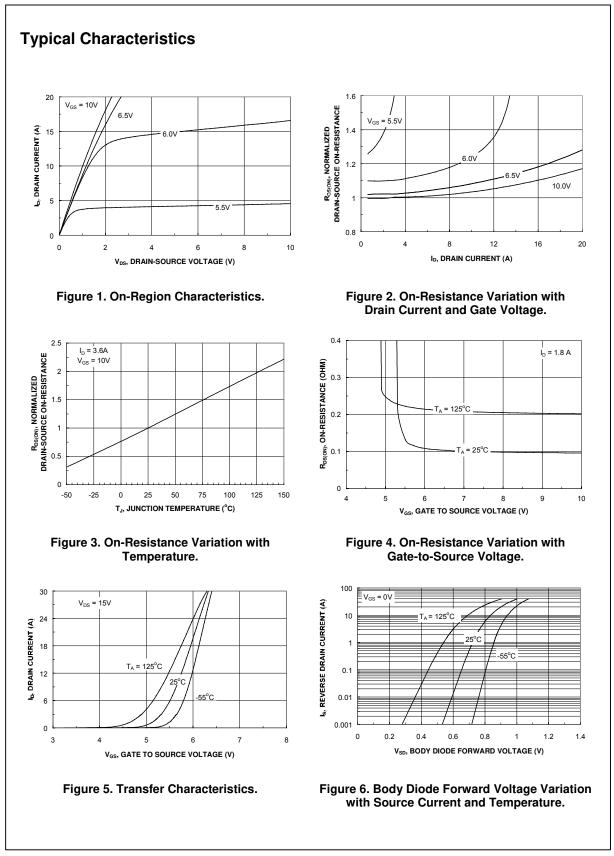
FDD2670

$U_{D} = 3.6 \text{ A}$ $V, I_{D} = 250 \mu\text{A}$ $D \mu \text{A}, \text{ Referenced to } 25^{\circ}\text{C}$ $W_{O} = 0 V$ $W_{DS} = 0 V$ $W_{DS} = 0 V$ $W_{DS} = 0 V$	200	214	375 3.6	mJ A V mV/°C
V, $I_D = 250 \ \mu A$ D μA , Referenced to 25°C $60 \ V$, $V_{GS} = 0 \ V$ $0 \ V$, $V_{DS} = 0 \ V$	200	214	3.6	A
$\begin{array}{l} \mu A, \mbox{ Referenced to } 25^{\circ} \mbox{C} \\ \hline 60 \mbox{ V}, \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	200	214		V
$\begin{array}{l} \mu A, \mbox{ Referenced to } 25^{\circ} \mbox{C} \\ \hline 60 \mbox{ V}, \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	200	214	1	-
$\begin{array}{l} \mu A, \mbox{ Referenced to } 25^{\circ} \mbox{C} \\ \hline 60 \mbox{ V}, \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	200	214	1	-
$\begin{array}{l} \mu A, \mbox{ Referenced to } 25^{\circ} \mbox{C} \\ \hline 60 \mbox{ V}, \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$		214	1	-
0 V, V _{DS} = 0 V			1	
			-	μA
20 V, V _{DS} = 0 V			100	NA
			-100	NA
_{GS} , I _D = 250 μA	2	4	4.5	V
μA, Referenced to 25°C		-10		mV/°C
0 V, I_D = 3.6 A T _J = 125°C		100 205	130 275	mΩ
0 V, V _{DS} = 5 V	20			Α
V, I _D = 3.6 A		15		S
00 V, V _{GS} = 0 V,		1228		PF
MHz		112		PF
		17		pF
00 V, I _D = 1 A,		13	23	ns
0 V, R _{GEN} = 6 Ω		8	16	ns
		30	40	
,		30	48	ns
		30 25	48 40	ns
00 V, I _D = 3.6 A,			-	
		25	40	ns
00 V, I _D = 3.6 A,		25 27	40	ns nC
00 V, I _D = 3.6 A, 0 V		25 27 7	40	ns nC nC
00 V, I _D = 3.6 A,		25 27 7	40	ns nC nC
	D μA, Referenced to 25°C 0 V, $I_D = 3.6 A$ 0 V, $I_D = 3.6 A T_J = 125°C$ 0 V, $V_{DS} = 5 V$ V, $I_D = 3.6 A$ 00 V, $V_{GS} = 0 V$, MHz 00 V, $I_D = 1 A$,	$\begin{array}{c c} & \text{Op} \ \text{A}, \ \text{Referenced to } 25^{\circ}\text{C} \\ \hline & \text{O} \ \text{V}, \ \text{Referenced to } 25^{\circ}\text{C} \\ \hline & \text{O} \ \text{V}, \ \text{I}_{\text{D}} = 3.6 \text{ A} \\ \hline & \text{O} \ \text{V}, \ \text{I}_{\text{D}} = 3.6 \text{ A} \\ \hline & \text{O} \ \text{V}, \ \text{V}_{\text{DS}} = 5 \text{ V} \\ \hline & \text{O} \ \text{V}, \ \text{V}_{\text{DS}} = 3.6 \text{ A} \\ \hline & \text{O} \ \text{V}, \ \text{V}_{\text{GS}} = 0 \text{ V}, \\ \hline & \text{MHz} \\ \hline \\ \hline & \text{O} \ \text{V}, \ \text{I}_{\text{D}} = 1 \text{ A}, \\ \end{array}$	$O_{\mu}A$, Referenced to 25°C -10 $O_{\nu}A$, Referenced to 25°C -10 $O_{\nu}A$, Referenced to 25°C -10 $O_{\nu}A$, Referenced to 25°C 205 $O_{\nu}A$, $I_D = 3.6 A$ 100 $O_{\nu}A$, $V_{DS} = 5 V$ 20 ν , $I_D = 3.6 A$ 15 $OO V$, $V_{GS} = 0 V$, 1228 MHz 112 $OO V$, $I_D = 1 A$, 13	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

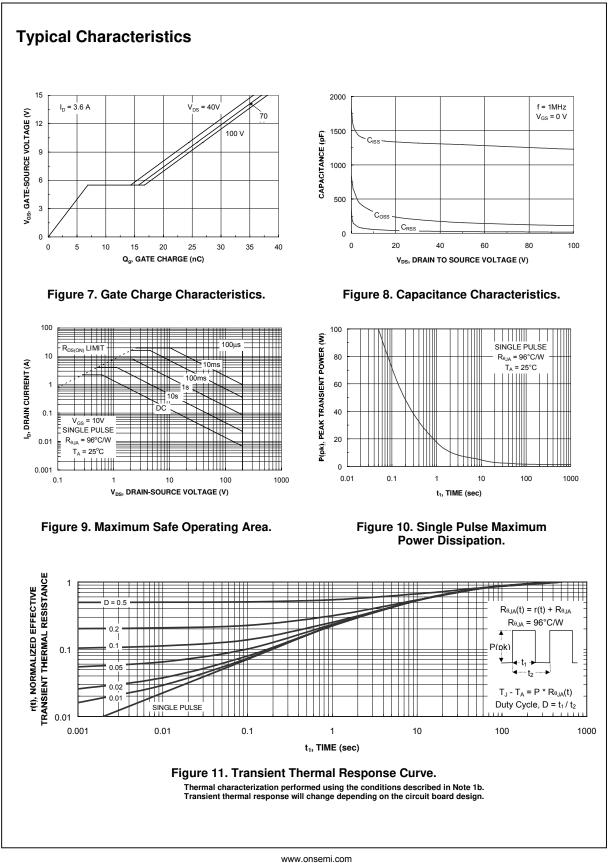
Scale 1 : 1 on letter size paper

2. Pulse Test: Pulse Width < 300 μ s, Duty Cycle < 2.0%

3. $I_{SD} \leq$ 3A, di/dt \leq 100A/µs, $V_{DD} \leq BV_{DSS},$ Starting T_{J} = 25°C



FDD2670



FDD2670

4

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