



Part Number	Package	Marking
HTD600N06	TO-252	

## Electrical Characteristics at T<sub>j</sub> X Q O H V V R W K H U Z L V H V S H F L I L H G

### Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250 mA	60	-	-	V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250 mA	1	2.0	3.2	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =48V, T <sub>j</sub>	-	-	1	mA
		V <sub>GS</sub> =0V, V <sub>DS</sub> =40V, T <sub>j</sub>	-	-	25	
Gate to Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	-	-	±100	nA
Drain to Source on Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =10A	-	50	60	mΩ
		V <sub>GS</sub> =5V, I <sub>D</sub> =8A	-	58	75	
Transconductance	g <sub>IV</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =10A	-	19	-	S
Gate Resistance	R <sub>G</sub>	V <sub>GS</sub> =15mV, V <sub>DS</sub> = 9   0 + ]	-	2.5	-	Ω

### Dynamic Characteristics

Input Capacitance	C <sub>iss</sub>		-	633	-	pF
Output Capacitance	C <sub>oss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> = 9   0 + ]	-	67	-	
5 H Y H U V H 7 U D Q V I H U & D S D F L W D Q F H	C <sub>iss</sub>		-	44	-	
Total Gate Charge	Q <sub>g</sub> (10V)		-	13.8	-	nC
Gate to Source Charge	Q <sub>gs</sub>	V <sub>DD</sub> =20V, I <sub>D</sub> =10A, V <sub>GS</sub> =10V	-	2.8	-	
Gate to Drain (Miller) Charge	Q <sub>gd</sub>		-	4.0	-	
Turn on Delay Time	t <sub>d(on)</sub>		-	10	-	ns
Rise time	t <sub>r</sub>	V <sub>DD</sub> =15V, I <sub>D</sub> =24A, V <sub>GS</sub> =10V,	-	7.5	-	
7 X U Q R I I ' H O D \ 7 L P H	t <sub>G R I I</sub>	R <sub>G</sub> =2.7 Ω,	-	18	-	
Fall Time	t <sub>f</sub>		-	6	-	



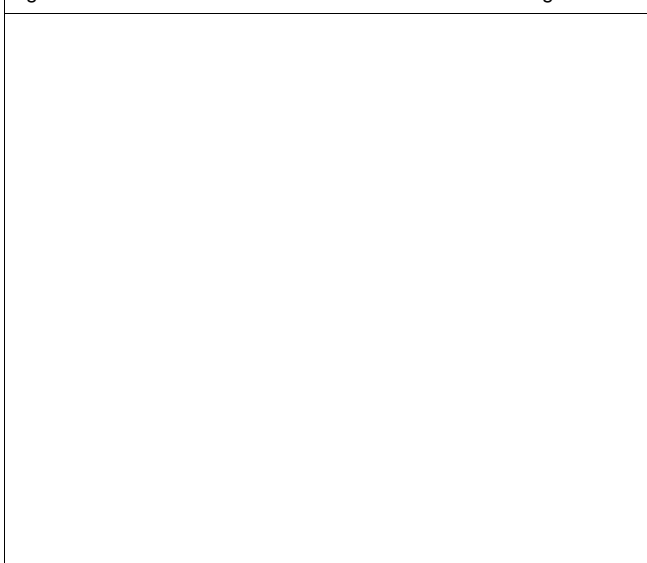
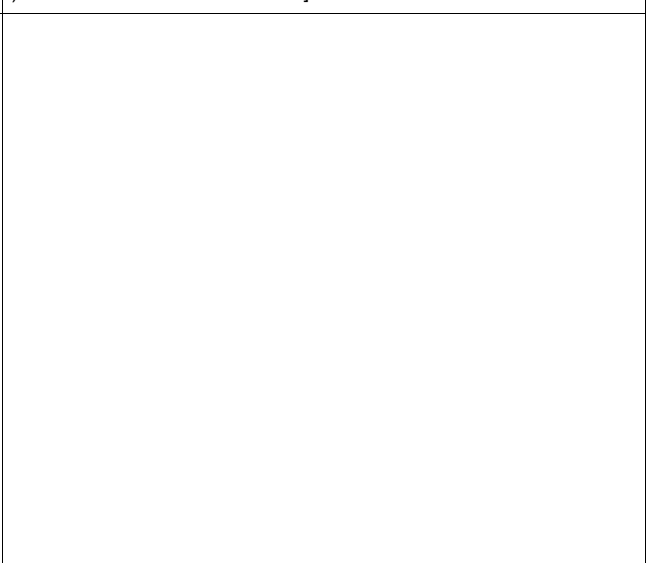
### Reverse Diode Characteristics

Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>F</sub> =12A	-		1.3	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =5A, dI <sub>F</sub> = 10 A/μs	-	15	-	ns
Reverse Recovery Charge	Q <sub>rr</sub>		-	8	-	nC



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<p>Fig 1. Typical Output Characteristics</p> 	<p>Figure 2. On-Resistance vs. Gate-Source Voltage</p> 
<p>Figure 3. On-Resistance vs. Drain Current and Gate Voltage</p> 	<p>Figure 4. Typical Source-Drain Diode Forward Voltage</p> 

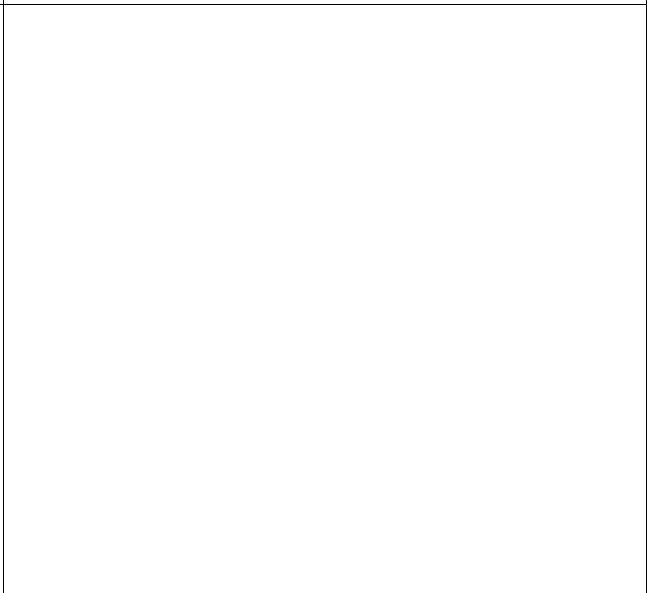
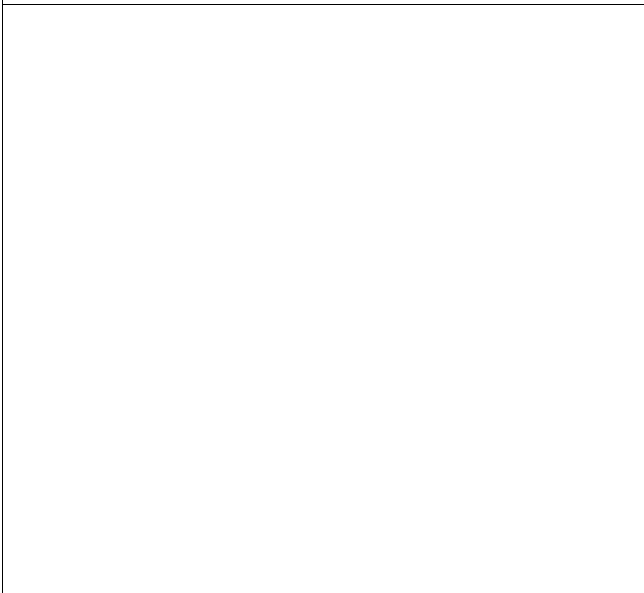


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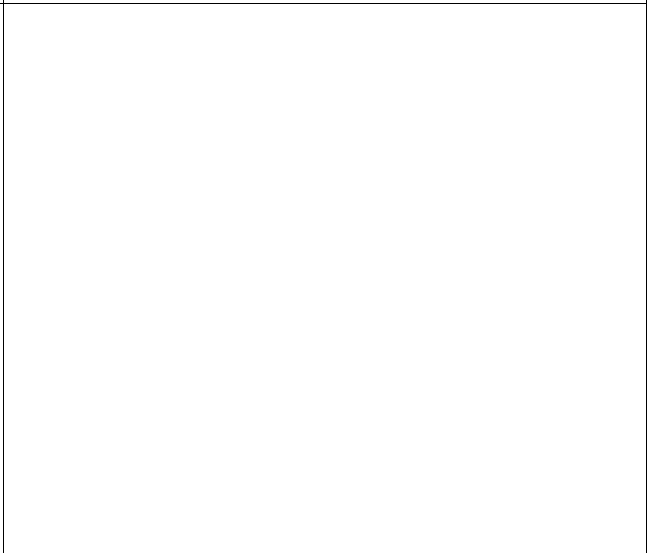
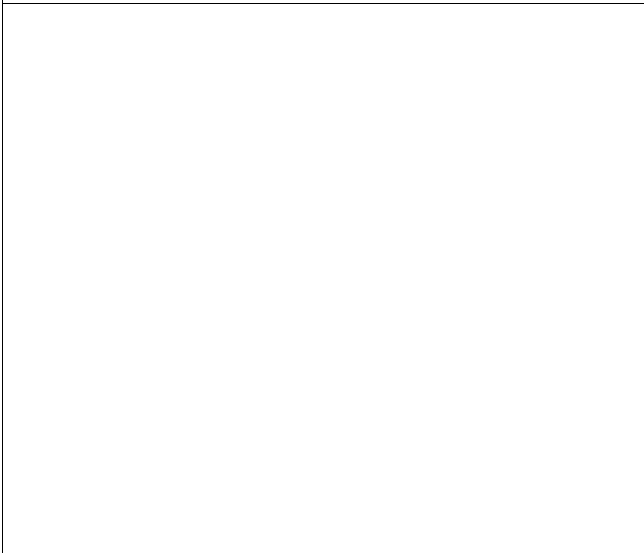
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Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

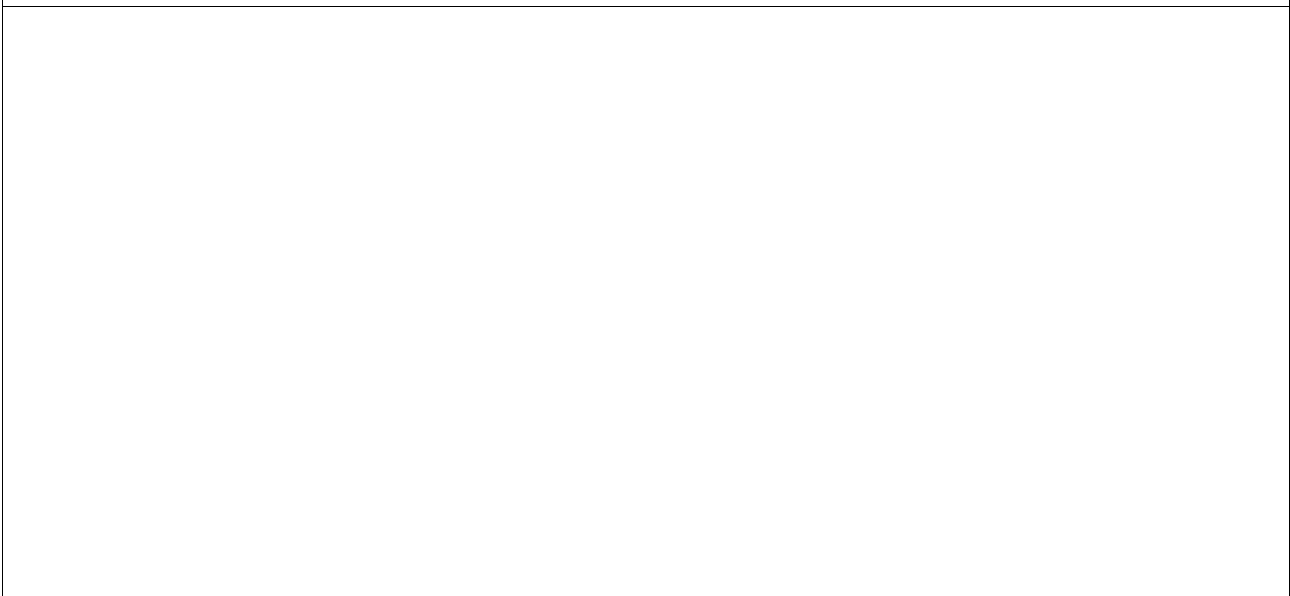
Figure 8. Typical Capacitance vs. Drain-to-Source Voltage



)LJXUH 0D[LPXP 6DIH 2SHUDWLQJ \$UHD Figure 10. Single Pulse Maximum Power Dissipation



)LJXUH 1RUPDOLJHG 0D[LPXP 7UDQVLHQW 7KHUPDO ,PSHGDQFH -XQFWLRG





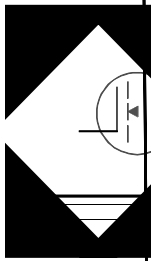
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Inductive switching Test



Gate Charge

Uclamped Inductive Sw



Diode Recov



HTD600N06

Package Outline

TO-252, 3leads