

## 30V N-Ch Power MOSFET

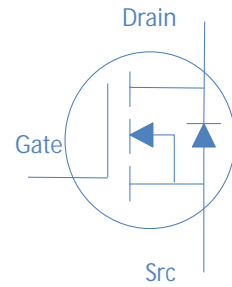
### Feature

- ◇ High Speed Power Switching, Logic Level
- ◇ Lead Free, Halogen Free

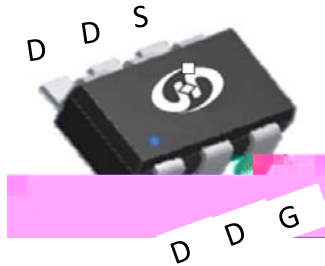
DS			
DS(on), typ	GS		Ω
D (Silicon Limited)		5.5	

### Application

- ◇ Hard Switching and High Speed Circuit
- ◇ DC/DC in Telecoms and Industrial



TSOP-6



Part Number	Package	Marking
HTO350N03	TSOP-6	

=25 (unless otherwise specified)

Parameter	Symbol	Conditions		
Continuous Drain Current (Silicon Limited)		=25	5.5	
		=70	3.6	
Drain to Source Voltage	DS			
Gate to Source Voltage	GS			
Pulsed Drain Current				
Power Dissipation		=25	1.25	W
Operating and Storage Temperature	J, T			

Parameter	Symbol		
Thermal Resistance Junction-Ambient	θJA		AW

## Electrical Characteristics at T =25 (unless otherwise specified)

### Static Characteristics

Parameter	Symbol	Conditions	typ		
Drain to Source Breakdown Voltage	$(BR)_{DSS}$	$V_{GS}=0V, I_D=10\mu A$			
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=10\mu A$	1.0	1.50	3.0
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{GS}=0V, V_{DS}=24V, T=25$ $V_{GS}=0V, V_{DS}=20V, T=125$			$\mu A$
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			
Drain to Source on Resistance	$r_{DS(on)}$	$V_{GS}=10V, I_D=5.5A$ $V_{GS}=4.5V, I_D=4.5A$			$\Omega$
Transconductance	$g_{fs}$	$V_{DS}=5V, I_D=5.5A$			S
Input Capacitance					
Output Capacitance		$V_{GS}=0V, V_{DS}=10V, f=1MHz$		75	pF
Reverse Transfer Capacitance	$C_{rss}$			7.1	
Gate to Drain (Miller) Charge	$Q_{gd}$	$V_{GS}=10V, I_D=5.5A, V_{DS}=10V$		2.2	
Turn on Delay Time	$t_{d(on)}$	$V_{GS}=15V, I_D=5.5A$			
<b>Reverse Diode Characteristics</b>					
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_F=100mA$			1.2

Fig 1. Typical Output Characteristics

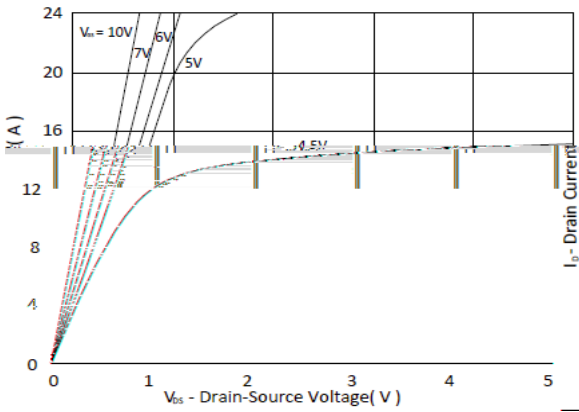


Figure 2. On-Resistance vs. Gate-Source Voltage

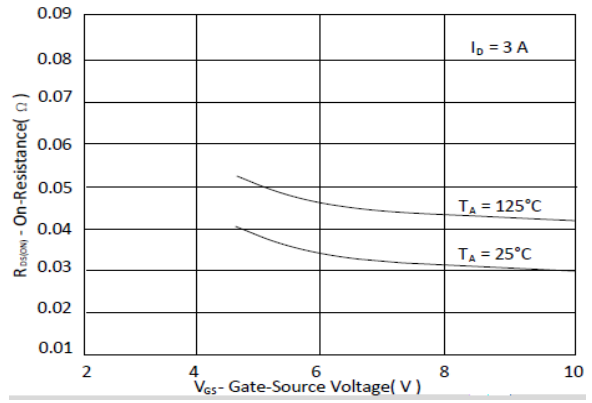


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

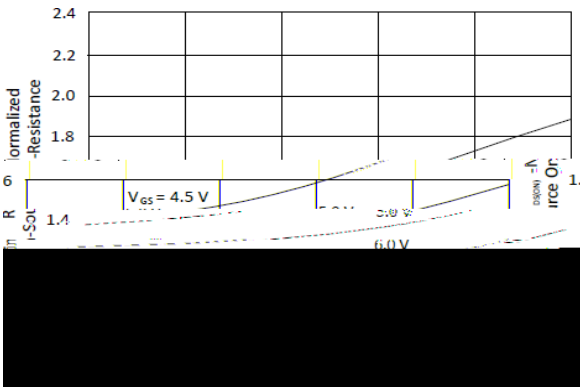


Figure 4. Normalized On-Resistance vs. Junction Temperature

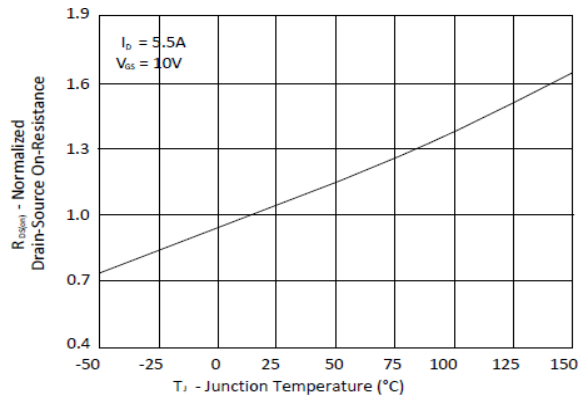


Figure 5. Typical Transfer Characteristics

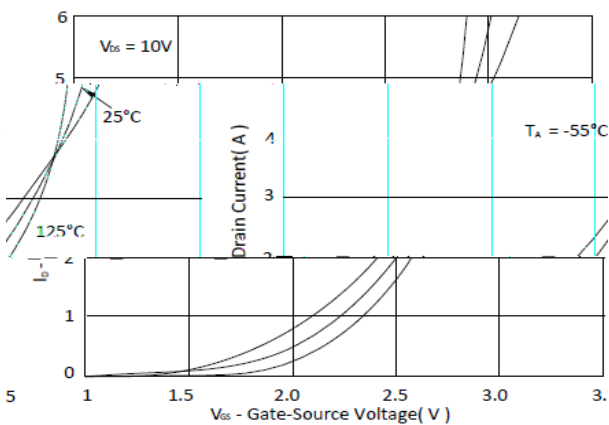


Figure 6. Typical Source-Drain Diode Forward Voltage

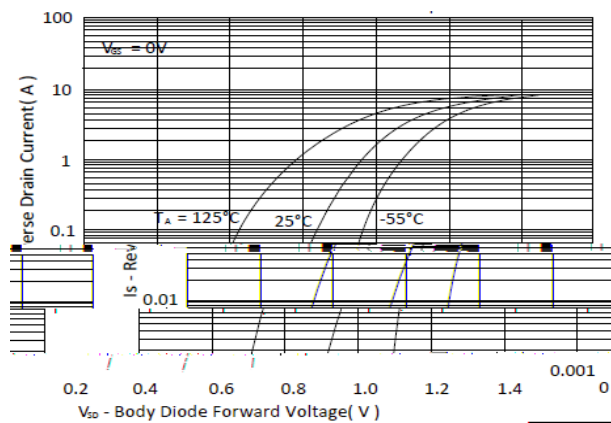




Figure 9. Maximum Safe Operating Area

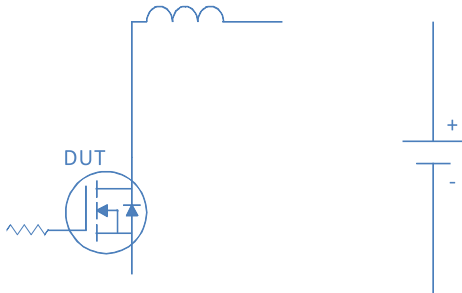
Inductive switching Test

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Gate Charge Test

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Uclamped Inductive Switching (UIS) Test

 <p>The diagram illustrates the UIS test circuit. It features a MOSFET labeled 'DUT' (Device Under Test) connected to a DC voltage source. The MOSFET's drain is connected to one terminal of an inductor, and the other terminal of the inductor is connected to the MOSFET's drain. The MOSFET's source is connected to the negative terminal of the DC source. The MOSFET's gate is connected to a separate terminal, and the MOSFET's body is connected to the source. The DC source is represented by a battery symbol with a '+' sign on the top terminal and a '-' sign on the bottom terminal.</p>	
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Diode Recovery Test

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Package Outline

TSOP-6, 6leads