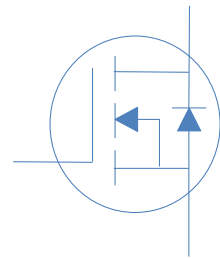
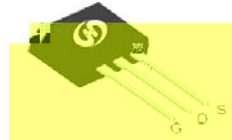


## 120V N-Ch Power MOSFET

$V_{DS}$	120	V
$R_{DS(on),typ}$	4.7	m $\Omega$
$I_D$ (Silicon Limited)	160	A
$I_D$ (Package Limited)	113	A



Part Number	Package	Marking
HGW059N12S	TO-262	GW059N12S

### Absolute Maximum Ratings at $T_j=25$ (unless otherwise specified)

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	$I_D$	$T_C=25$	160	A
		$T_C=100$	113	
		$T_C=25$	120	
Continuous Drain Current (Package Limited)			120	
Drain to Source Voltage	$V_{DS}$	-	120	V
Gate to Source Voltage	$V_{GS}$	-	$\pm 20$	V
Pulsed Drain Current	$I_{DM}$	-	500	A
Avalanche Energy, Single Pulse	$E_{AS}$	$L=0.4mH, T_C=25$	720	mJ
Power Dissipation	$P_D$	$T_C=25$	333	W
Operating and Storage Temperature	$T_J, T_{stg}$	-	-55 to 175	

### Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Case	$R_{JC}$	0.45	$\text{W}^{-1}$
Thermal Resistance Junction-Ambient	$R_{JA}$	60	$\text{W}^{-1}$

## Electrical Characteristics at $T_j=25$ (unless otherwise specified)

### Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	120	-	-	V
				3	4	
		$V_{GS}=0V, V_{DS}=120V, T_{jth} \leq 125^\circ C, I_{Dmax} \leq 1.0A$				$\mu A$

Fig 1. Typical Output Characteristics

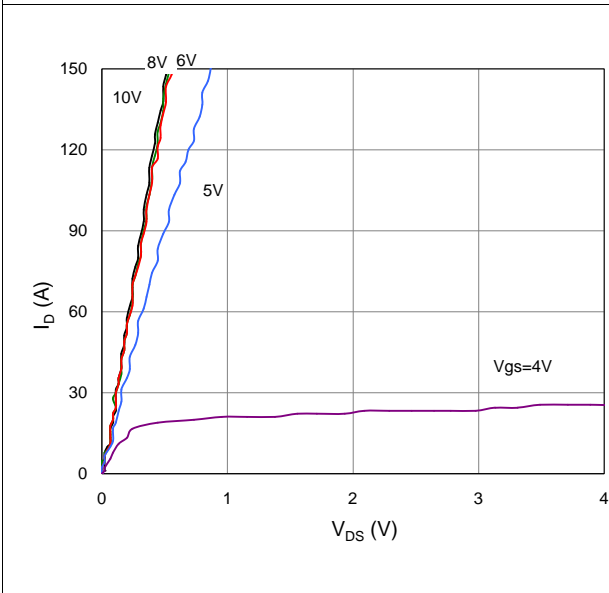


Figure 2. On-Resistance vs. Gate-Source Voltage

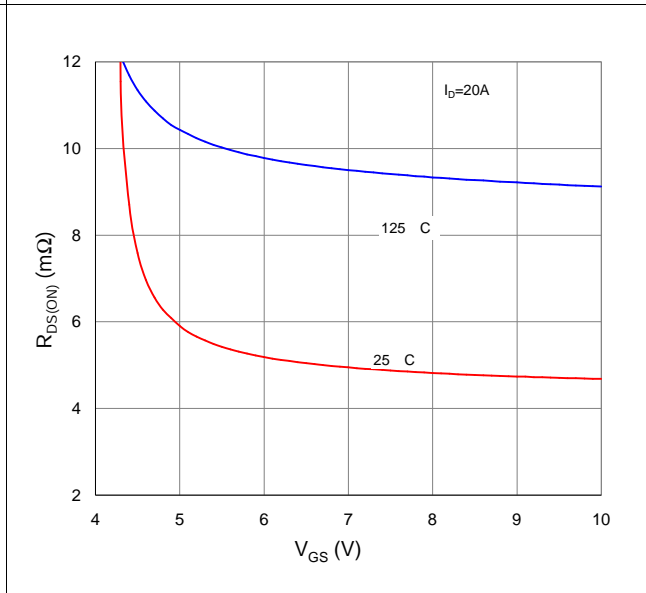


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

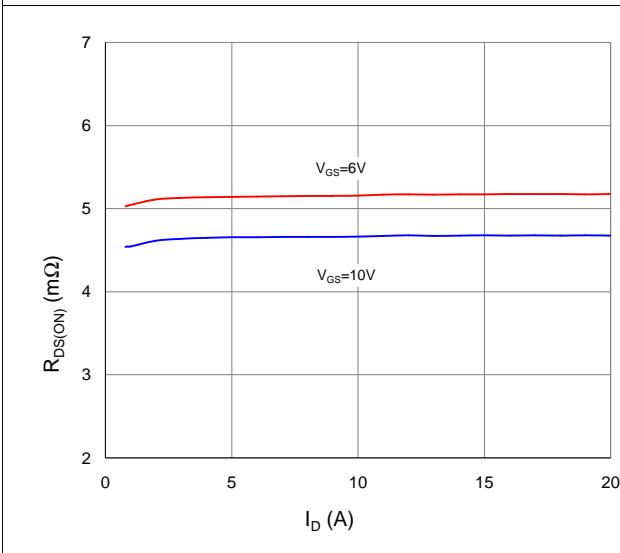


Figure 4. Normalized On-Resistance vs. Junction Temperature

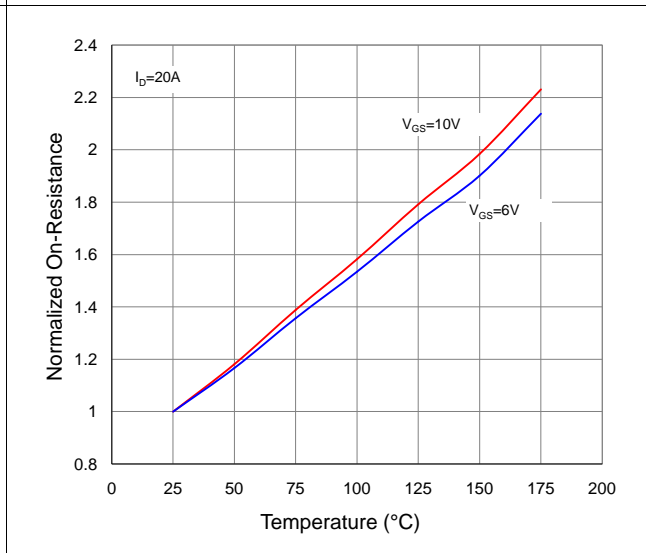


Figure 5. Typical Transfer Characteristics

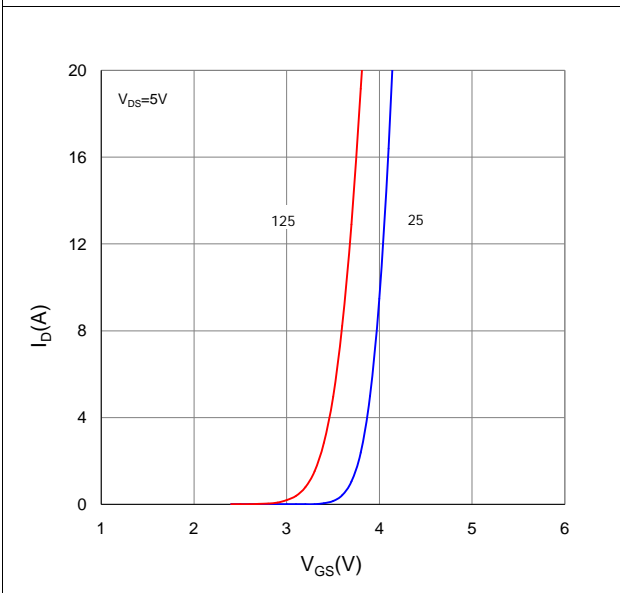
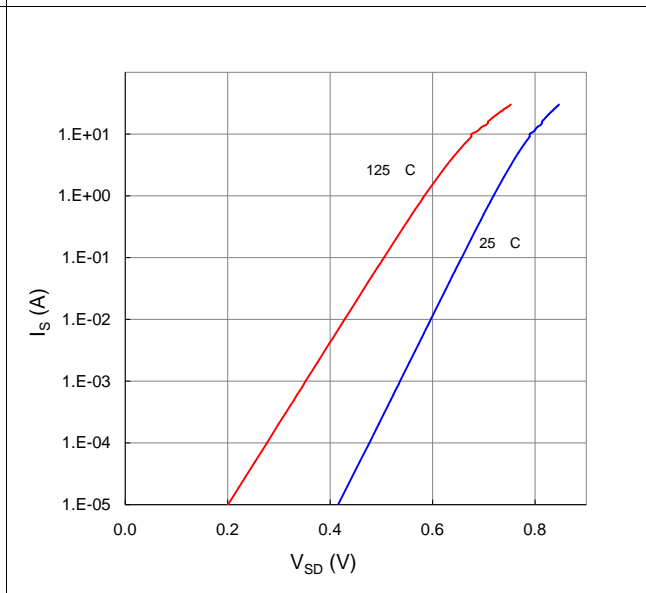


Figure 6. Typical Source-Drain Diode Forward Voltage





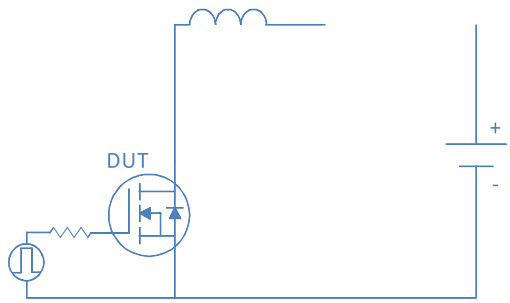
Inductive switching Test

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Gate Charge Test

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Uclamped Inductive Switching (UIS) Test

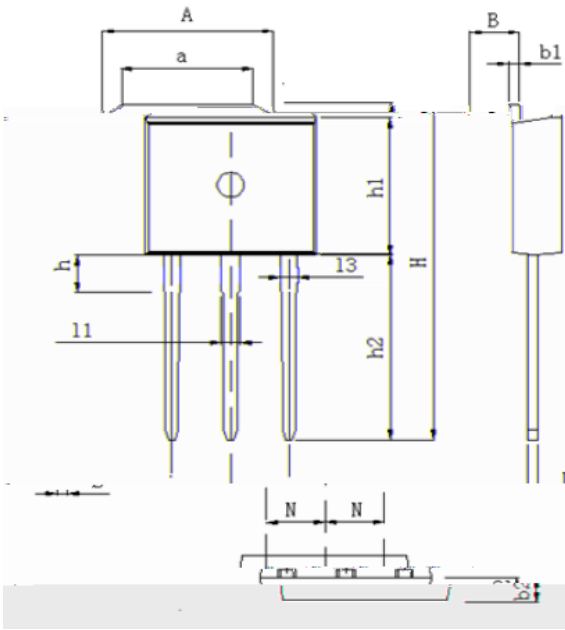
	
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Diode Recovery Test

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TO-262, 3 leads

Unit: mm



DIM	MILLIMETERS
A	9.98±0.2
a	7.4±0.4
B	4.5±0.2
b1	1.3±0.05
b2	2.4±0.2
H	23.9±0.3
h	3.1±0.2
h1	9.16±0.2
h2	13.2±0.2
L	0.5±0.1
l1	1.3±0.1
l2	0.8±0.1
N	2.45±0.1