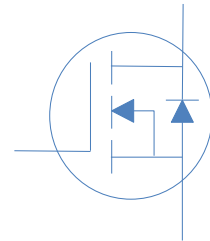
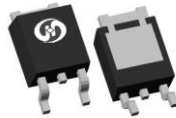


## 150V N-Ch Power MOSFET

$V_{DS}$	150	V
$R_{DS(on),typ}$	16.0	m
$I_D$ (Silicon Limited)	56	A



Part Number	Package	Marking
HGD195N15S	TO-252	GD195N15S

### Absolute Maximum Ratings at $T_J=25^{\circ}\text{C}$ (unless otherwise specified)

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	$I_D$	$T_C=25^{\circ}\text{C}$	56	A
		$T_C=100^{\circ}\text{C}$	40	
Drain to Source Voltage	$V_{DS}$	-	150	V
Gate to Source Voltage	$V_{GS}$	-	$\pm 20$	V
Pulsed Drain Current	$I_{DM}$	-	180	A
Avalanche Energy, Single Pulse	$E_{AS}$	$L=0.4\text{mH}, T_C=25^{\circ}\text{C}$	80	mJ
Power Dissipation	$P_D$	$T_C=25^{\circ}\text{C}$	136	W
Operating and Storage Temperature	$T_J, T_{stg}$	-	-55 to 175	$^{\circ}\text{C}$

### Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	$R_{JA}$	50	$^{\circ}\text{C}/\text{W}$
Thermal Resistance Junction-Case	$R_{JC}$	1.1	$^{\circ}\text{C}/\text{W}$

Electrical Characteristics at  $T_J=25^\circ\text{C}$  (unless otherwise specified)

## Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\text{ A}$	150	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\text{ A}$	2	3	4	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{GS}=0V, V_{DS}=150V, T_J=25^\circ\text{C}$	-	-	1	A
		$V_{GS}=0V, V_{DS}=150V, T_J=100^\circ\text{C}$	-	-	100	
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 100$	nA
Drain to Source on Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$	-	16	19.5	m
Transconductance	$g_{fs}$	$V_{DS}=5V, I_D=20A$	-	55	-	S
Gate Resistance	$R_G$	$V_{GS}=0V, V_{DS}\text{ Open}, f=1\text{MHz}$	-	2.2	-	

## Dynamic Characteristics

Reverse Transfer Capacitance	$C_{rss}$	-		pF
				nC

Fig 1. Typical Output Characteristics

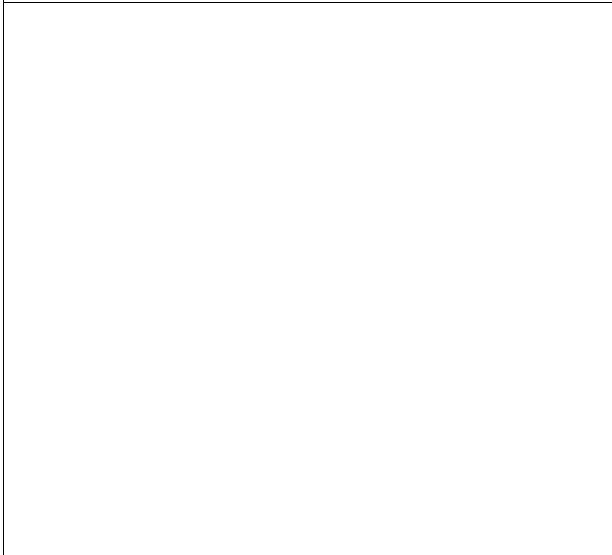


Figure 2. On-Resistance vs. Gate-Source Voltage

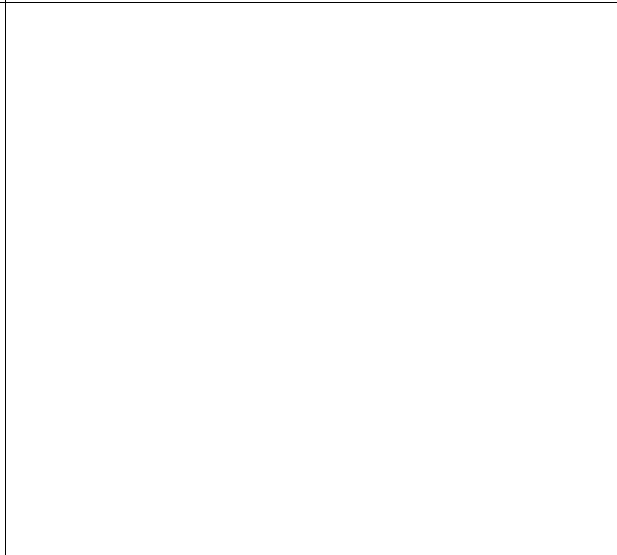


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

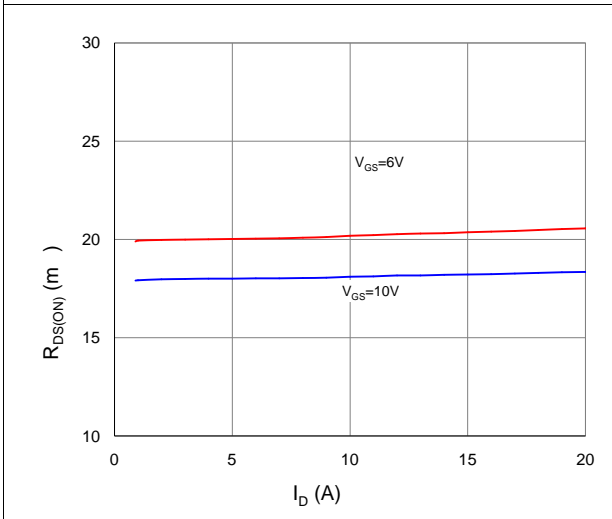


Figure 4. Normalized On-Resistance vs. Junction Temperature

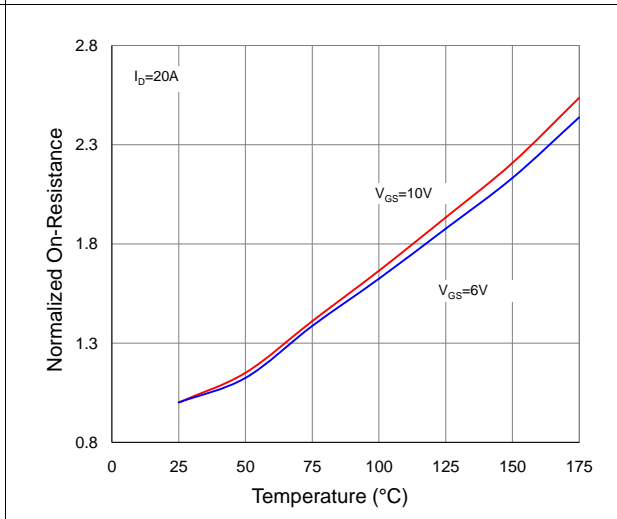


Figure 5. Typical Transfer Characteristics

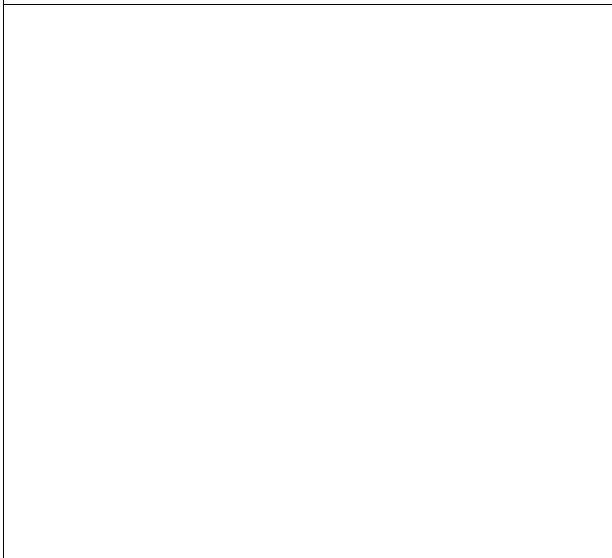


Figure 6. Typical Source-Drain Diode Forward Voltage

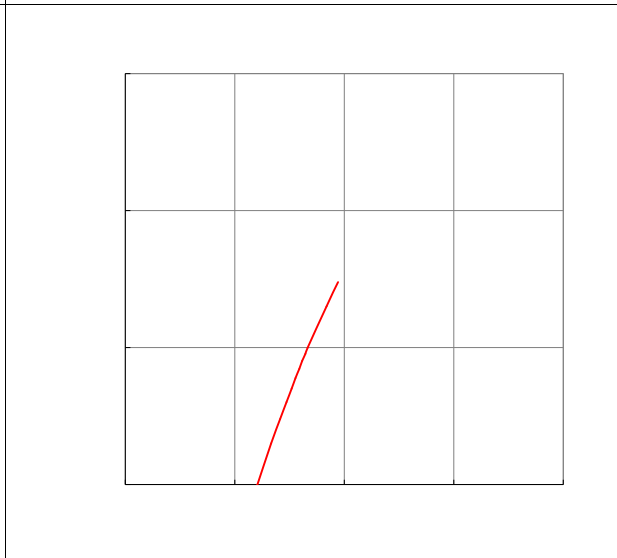


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

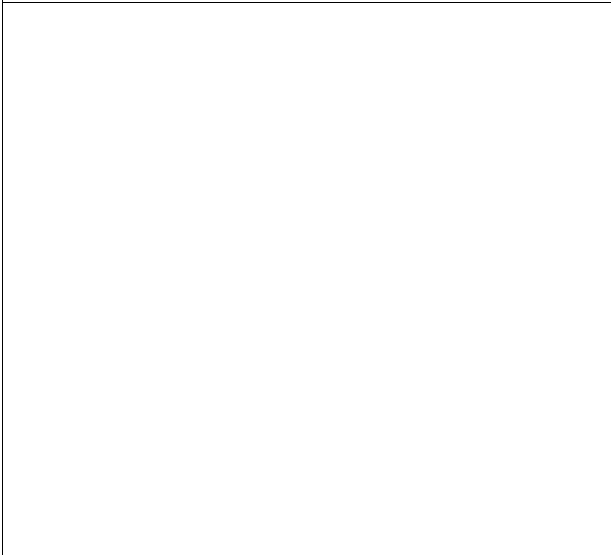


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

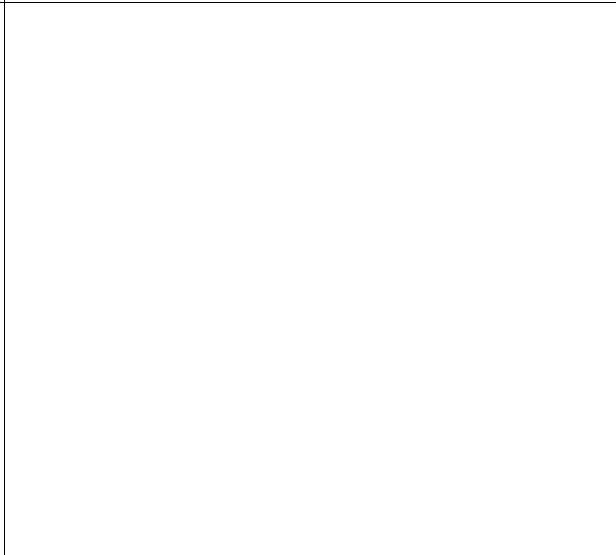


Figure 9. Maximum Safe Operating Area

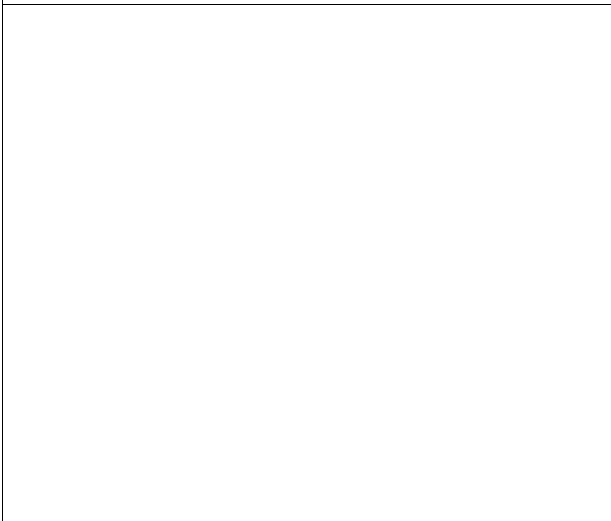


Figure 10. Maximum Drain Current vs. Case Temperature

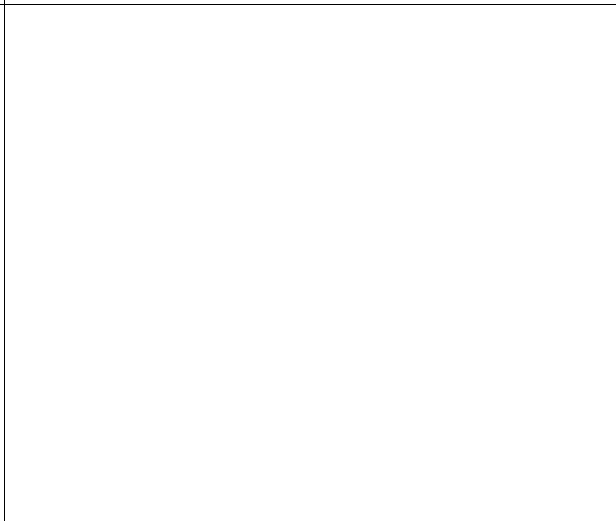
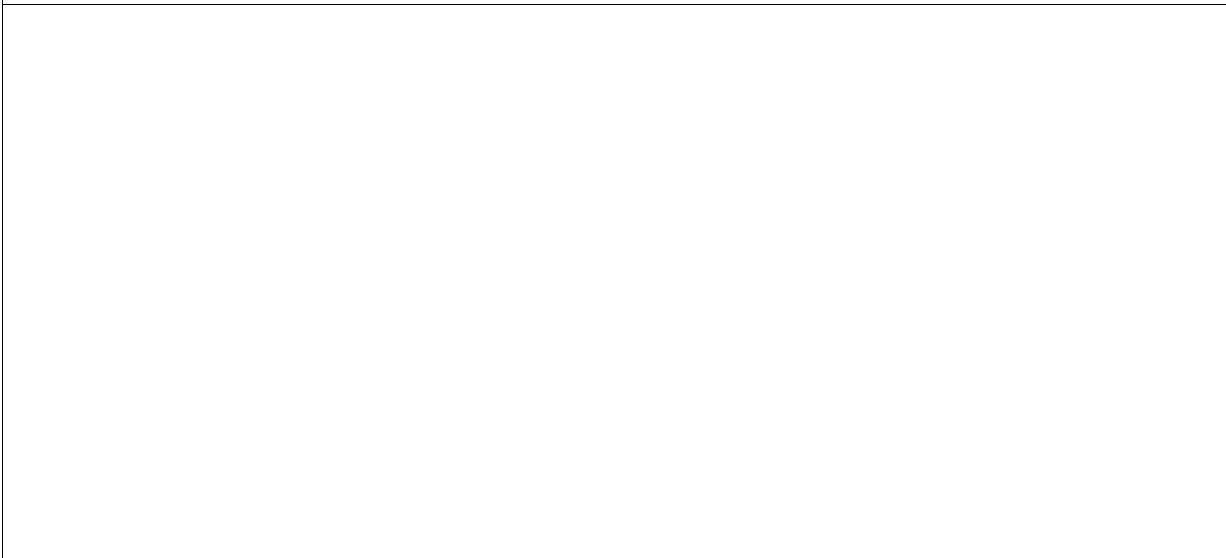
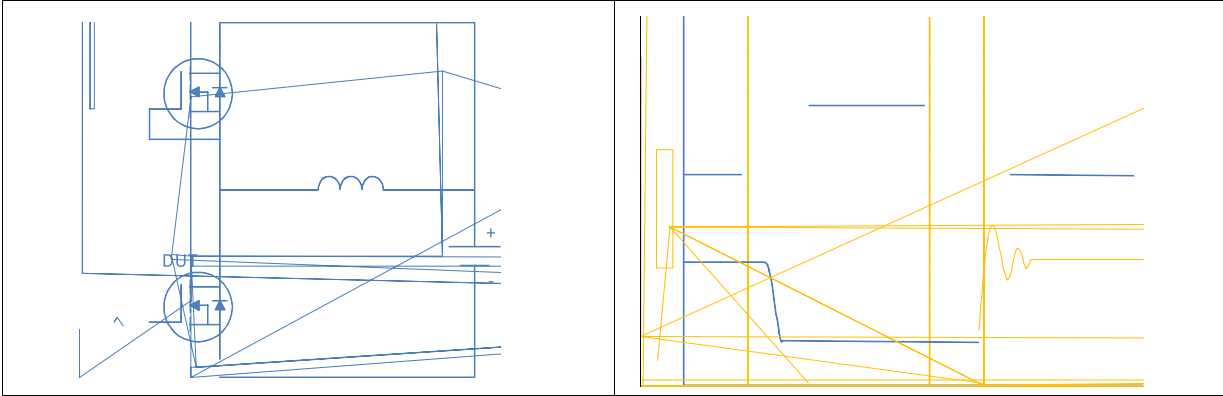


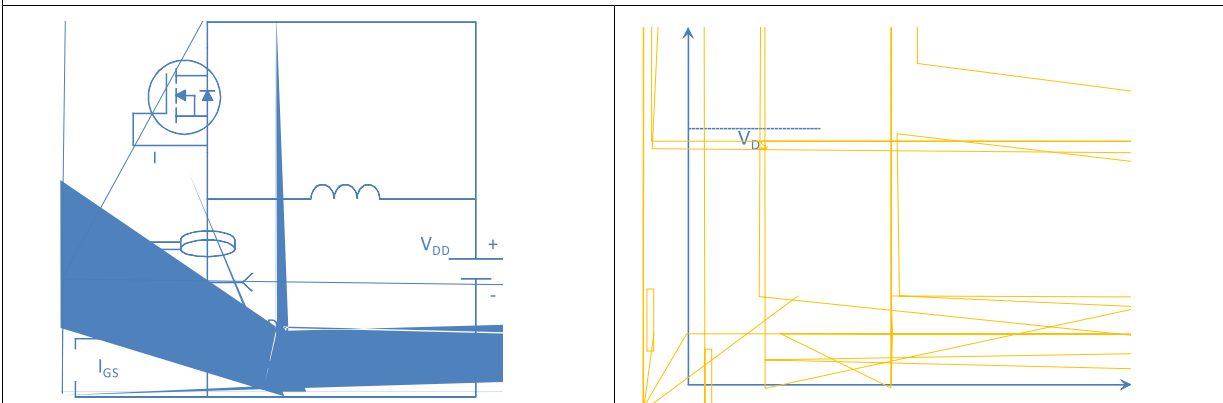
Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient



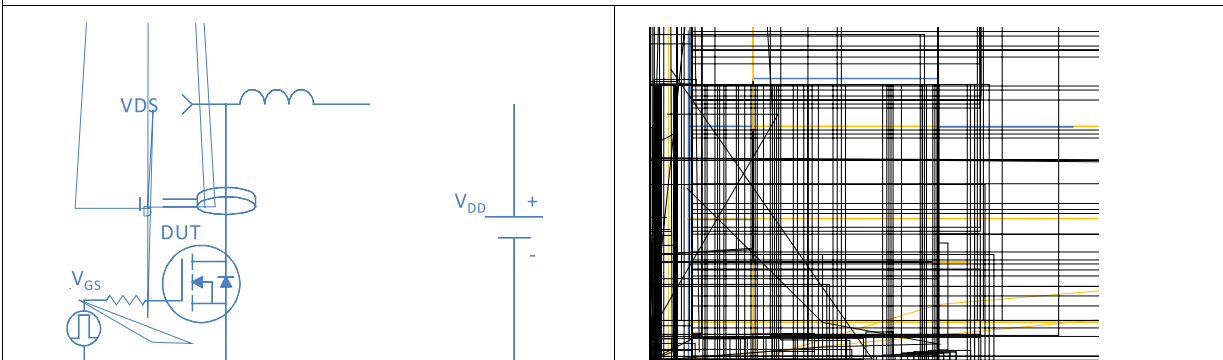
Inductive switching Test



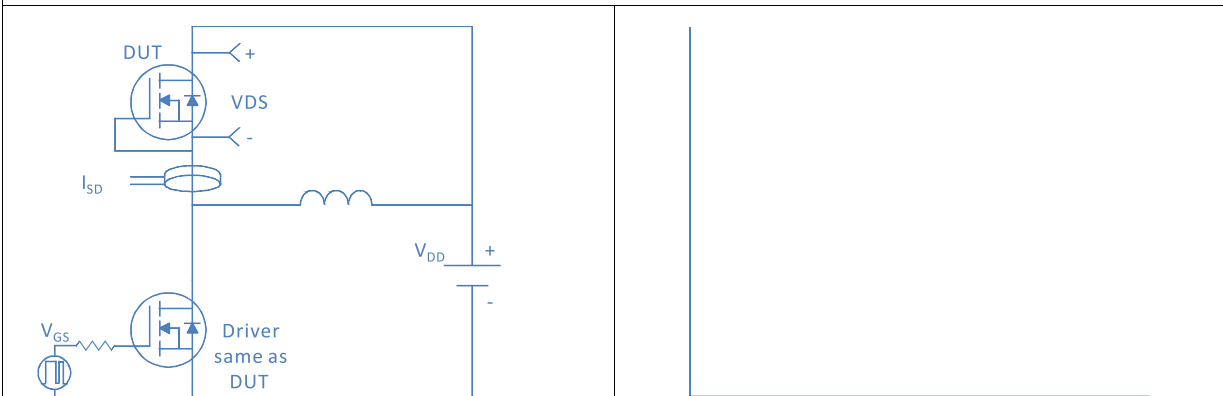
Gate Charge Test



Uclamped Inductive Switching (UIS) Test

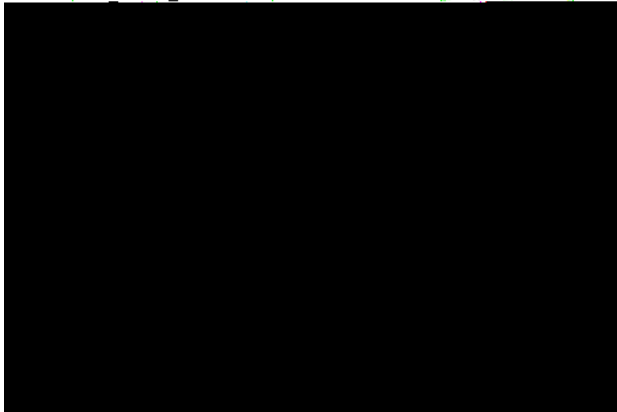


Diode Recovery Test



Package Outline

TO-252, 3 leads



SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
E	6.40	6.60	6.731
L	1.40	1.52	1.77
L1	2.743 REF		
L2	0.508 BSC		
L3	0.89	--	1.27
L4	0.64	--	1.01
L5	--	--	--
D	6.00	6.10	6.223
H	0.10	0.10	0.10
W	0.60	0.60	0.60
W2	0.60	0.60	0.60
W3	0.60	0.60	0.60
W4	0.60	0.60	0.60
W5	0.60	0.60	0.60
W6	0.60	0.60	0.60
W7	0.60	0.60	0.60
W8	0.60	0.60	0.60
W9	0.60	0.60	0.60
W10	0.60	0.60	0.60
W11	0.60	0.60	0.60
W12	0.60	0.60	0.60
W13	0.60	0.60	0.60
W14	0.60	0.60	0.60
W15	0.60	0.60	0.60
W16	0.60	0.60	0.60
W17	0.60	0.60	0.60
W18	0.60	0.60	0.60
W19	0.60	0.60	0.60
W20	0.60	0.60	0.60
W21	0.60	0.60	0.60
W22	0.60	0.60	0.60
W23	0.60	0.60	0.60
W24	0.60	0.60	0.60
W25	0.60	0.60	0.60
W26	0.60	0.60	0.60
W27	0.60	0.60	0.60
W28	0.60	0.60	0.60
W29	0.60	0.60	0.60
W30	0.60	0.60	0.60
W31	0.60	0.60	0.60
W32	0.60	0.60	0.60
W33	0.60	0.60	0.60
W34	0.60	0.60	0.60
W35	0.60	0.60	0.60
W36	0.60	0.60	0.60
W37	0.60	0.60	0.60
W38	0.60	0.60	0.60
W39	0.60	0.60	0.60
W40	0.60	0.60	0.60
W41	0.60	0.60	0.60
W42	0.60	0.60	0.60
W43	0.60	0.60	0.60
W44	0.60	0.60	0.60
W45	0.60	0.60	0.60
W46	0.60	0.60	0.60
W47	0.60	0.60	0.60
W48	0.60	0.60	0.60
W49	0.60	0.60	0.60
W50	0.60	0.60	0.60
W51	0.60	0.60	0.60
W52	0.60	0.60	0.60
W53	0.60	0.60	0.60
W54	0.60	0.60	0.60
W55	0.60	0.60	0.60
W56	0.60	0.60	0.60
W57	0.60	0.60	0.60
W58	0.60	0.60	0.60
W59	0.60	0.60	0.60
W60	0.60	0.60	0.60
W61	0.60	0.60	0.60
W62	0.60	0.60	0.60
W63	0.60	0.60	0.60
W64	0.60	0.60	0.60
W65	0.60	0.60	0.60
W66	0.60	0.60	0.60
W67	0.60	0.60	0.60
W68	0.60	0.60	0.60
W69	0.60	0.60	0.60
W70	0.60	0.60	0.60
W71	0.60	0.60	0.60
W72	0.60	0.60	0.60
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W74	0.60	0.60	0.60
W75	0.60	0.60	0.60
W76	0.60	0.60	0.60
W77	0.60	0.60	0.60
W78	0.60	0.60	0.60
W79	0.60	0.60	0.60
W80	0.60	0.60	0.60
W81	0.60	0.60	0.60
W82	0.60	0.60	0.60
W83	0.60	0.60	0.60
W84	0.60	0.60	0.60
W85	0.60	0.60	0.60
W86	0.60	0.60	0.60
W87	0.60	0.60	0.60
W88	0.60	0.60	0.60
W89	0.60	0.60	0.60
W90	0.60	0.60	0.60
W91	0.60	0.60	0.60
W92	0.60	0.60	0.60
W93	0.60	0.60	0.60
W94	0.60	0.60	0.60
W95	0.60	0.60	0.60
W96	0.60	0.60	0.60
W97	0.60	0.60	0.60
W98	0.60	0.60	0.60
W99	0.60	0.60	0.60
W100	0.60	0.60	0.60

