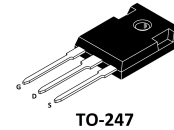


## MS30N95HGC0

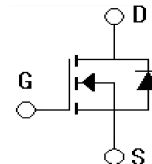
### Features

- $V_{DS}=950V, I_D=30A$   
 $R_{DS(on)} < 0.25\Omega$
- avalanche tested and current rated
- Fast intrinsic Rectifier



### Applications

- High power density
- Easy to mount
- Space savings



### Absolute Ratings ( $T_C=25^\circ C$ )

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DSS}$	950	V
Gate-Source Voltage	$V_{GSS}$	$\pm 30$	V
Drain Current-continuous	$I_D$	30	A
Drain Current-pulse (1)	$I_{DM}$	55	A
Single Pulsed Avalanche Energy (2)	$E_{AS}$	750	mJ
Maximum Power Dissipation	PD	290	W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55~+175	$^\circ C$
Maximum lead temperature for soldering purposes	TL	300	$^\circ C$
Isolation Voltage Between Case to Thermal	$V_{ISO}$	3.0	kV

### Electrical Characteristics ( $T_{CASE}=25^\circ C$ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	$BV_{DSS}$	$I_D=3mA, V_{GS}=0V$	950	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=V_{DSS}, V_{GS}=0V$	-	-	1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	$\pm 100$	nA

<b>On-Characteristics</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=2.5mA$	3.0	-	5.0	V
Static Drain-Source On-Resistance (3)	$R_{DS(ON)}$	$V_{GS}=10V, I_D=15A$	-	0.25	0.33	$\Omega$
Forward Transconductance	$g_{fs}$	$V_{DS}=10V, I_D=15A$ (note3)	-	31	-	S
<b>Dynamic Characteristics</b>						
Input capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V,$ $f=1.0MHZ$	-	4690	-	pF
Output capacitance	$C_{oss}$		-	421	-	pF
Reverse transfer capacitance	$C_{rss}$		-	15	-	pF
<b>Switching-Characteristics</b>						
Turn-On delay time	$t_{d(on)}$	$V_{DS}=750V, I_D=4A,$ $R_g=25\Omega$ (note3,4)	-	76	-	ns
Turn-On rise time	$t_r$		-	52	-	ns
Turn-Off delay time	$t_{d(off)}$		-	338	-	ns
Turn-Off rise time	$t_f$		-	76	-	ns
Total Gate Charge	$Q_g$	$V_{DS}=750V, I_D=4A,$ $V_{GS}=10V$ (note3,4)	-	96	-	nC
Gate-Source charge	$Q_{gs}$		-	26	-	nC
Gate-Drain charge	$Q_{gd}$		-	31	-	nC
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
Maximum Continuous Drain-Source Diode Forward Current	$V_{SD}$	$V_{GS}=0V, I_S=15A$	-	-	1.2	V
Diode Forward Current	$I_S$	$TC=25^\circ C$	-	-	30	A
Reverse recovery time	$T_{rr}$	$I_S=4A,$ $di/dt=100A/\mu s$ $V_R=950V, V_{GS}=0V$	-	0.4	-	us
Reverse Recovery Charge	$Q_{rr}$		-	3.9	-	uC

## Thermal Characteristics

Parameter	Symbol	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.43
Case to Sink Thermal Resistance, junction-Ambient	$R_{th(C-A)}$	40

$^{\circ}\text{C}/\text{W}$

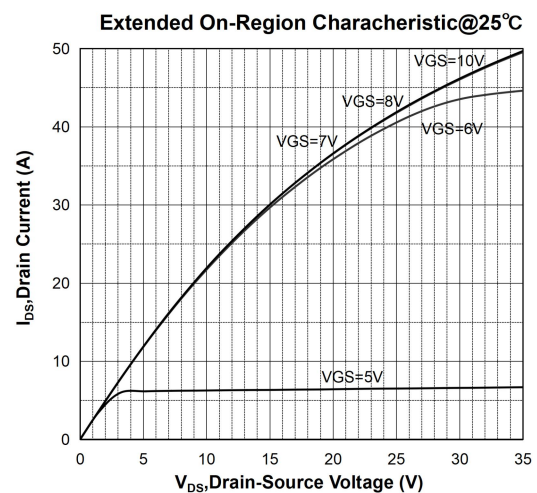
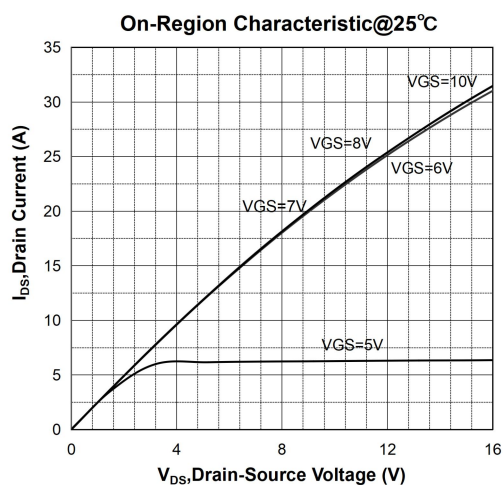
## Order Message

Marking	Package
MS30N95HGC0	TO-247

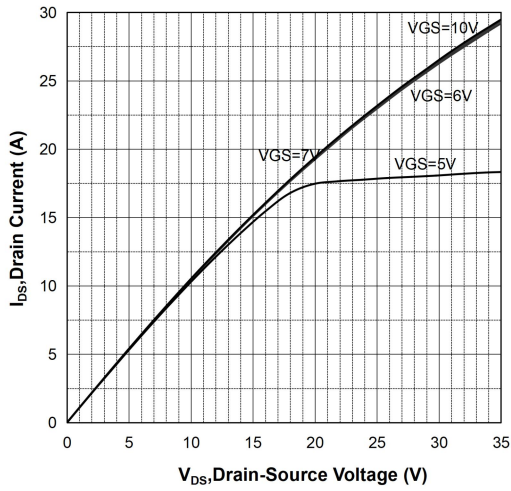
Notes:

1. Repetitive Rating : Pulse width limited by maximum junction temperature
2.  $L = 15 \text{ mH}$ ,  $I_{AS} = 10 \text{ A}$ ,  $V_{DD} = 50\text{V}$ ,  $R_G = 25 \Omega$ , Starting  $T_J = 25^{\circ}\text{C}$
3. Pulse Test : Pulse width  $\leq 300\mu\text{s}$ , Duty cycle  $\leq 2\%$
4. Essentially independent of operating temperature

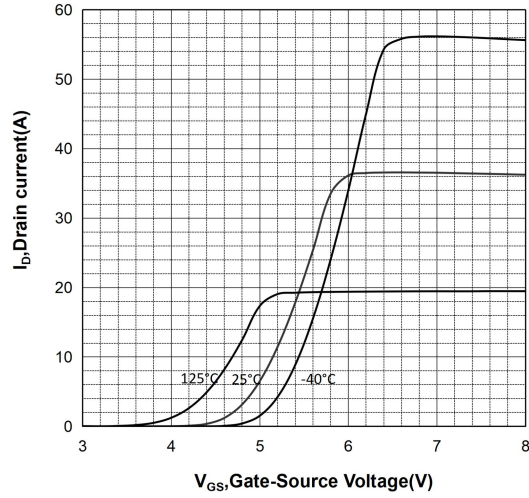
## Electrical Characteristics



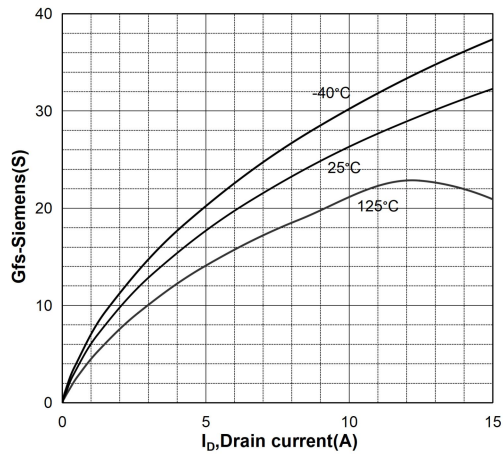
On-Region Characteristic@125°C



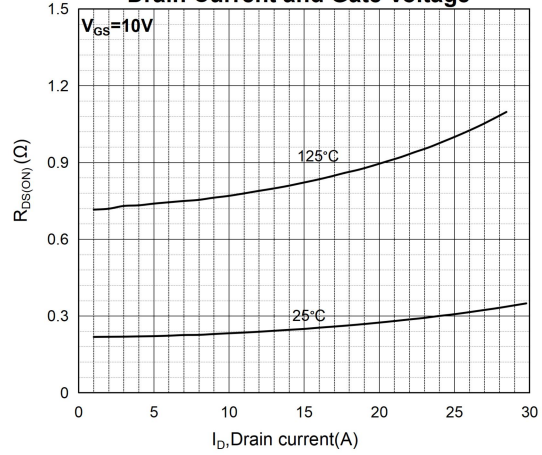
Transfer Characteristics



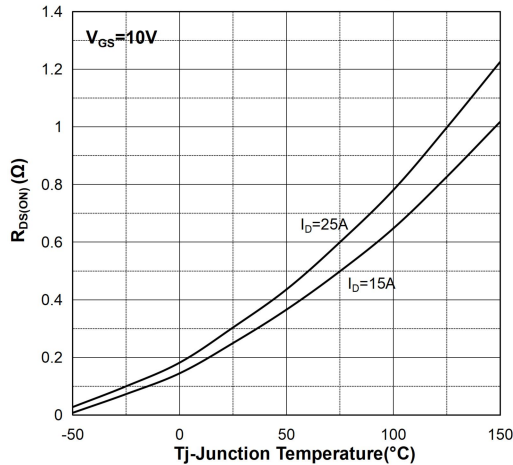
Transconductance



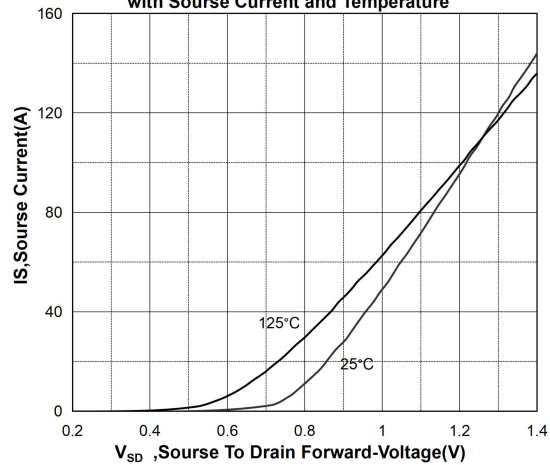
On-Resistance Variation vs Drain Current and Gate Voltage

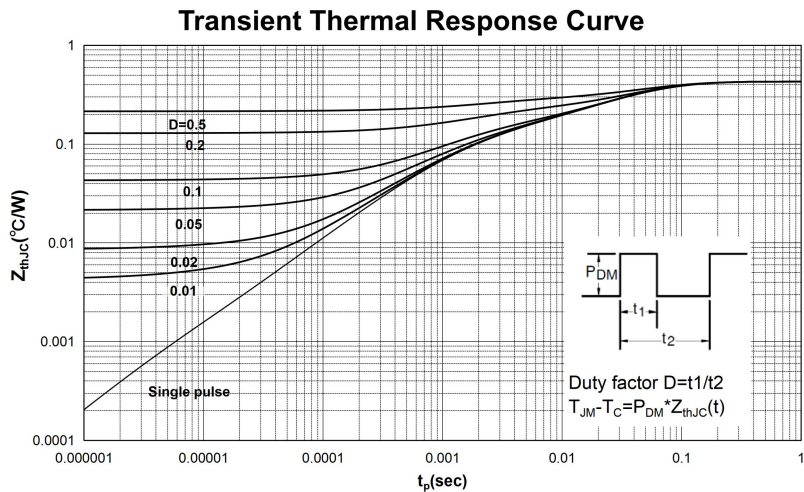
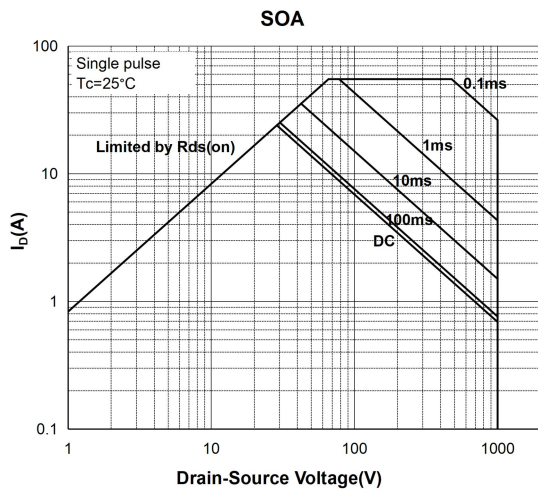
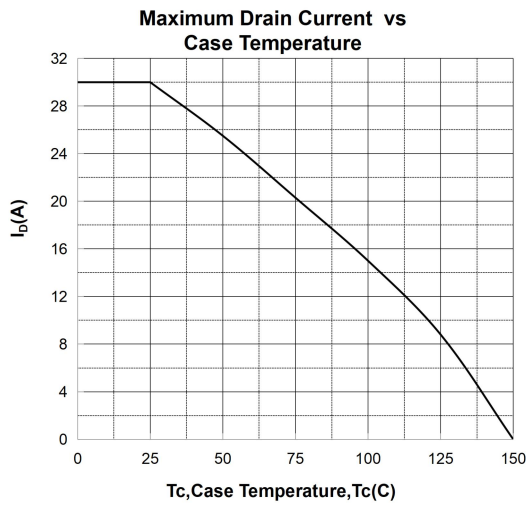
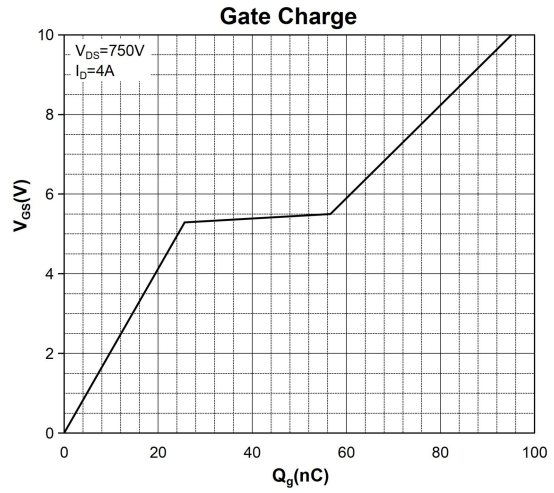
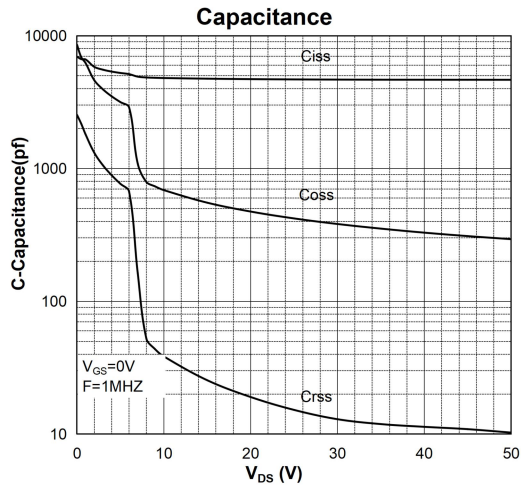


On-Resistance Variation vs Temperature



Body Diode Forward Voltage Variation with Source Current and Temperature





## Package Mechanical DATA

