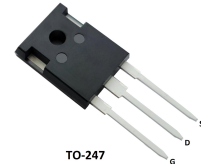
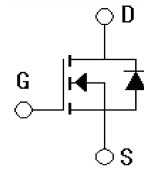


## Features

- Very low FOM  $R_{DS(on)} \times Q_g$
- 100% avalanche tested
- Easy to use/drive
- RoHS compliant

## Applications

- Uninterruptible Power Supply
- Power Factor Correction



## Absolute Ratings (T<sub>c</sub>=25°C)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DSS</sub>	900	V
Drain Current-continuous	I <sub>D</sub> , T=25°C T=100°C	30	A
		22	A
Drain Current-pulse (note 1)	I <sub>DM</sub>	120	A
Gate-Source Voltage	V <sub>GSS</sub>	±30	V
Single Pulsed Avalanche Energy (note 2)	E <sub>AS</sub>	280	mJ
Repetitive Avalanche Energy(note 2)	E <sub>AR</sub>	0.5	mJ
Avalanche Current	I <sub>AR</sub>	7.5	A
Power Dissipation	PD TC=25°C Derate above 25°C	240	W
		1.92	W/°C
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55~+150	°C

## Electrical Characteristics(T<sub>CASE</sub>=25°C unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	BV <sub>DSS</sub>	I <sub>D</sub> =250μA, V <sub>GS</sub> =0V	900	-	-	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =900V, V <sub>GS</sub> =0V	-	-	1	μA
		V <sub>DS</sub> =900V, T <sub>C</sub> =150°C	-	-	100	μA
Gate body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±30V	-	-	±100	nA

## On-Characteristics

Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.5	-	4.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=15V, I_D=20A$	-	170	-	m $\Omega$
<b>Dynamic Characteristics</b>						
Input capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V,$ $f=1.0MHz$	-	2840	-	pF
Output capacitance	$C_{oss}$		-	220	-	pF
Reverse transfer capacitance	$C_{rss}$		-	16	-	pF

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
<b>Switching-Characteristics</b>						
Turn-On delay time	$t_{d(on)}$	$V_{DD}=400V, I_D=30A,$ $R_G=25\Omega$	-	49	-	ns
Turn-On rise time	$t_r$		-	42	-	ns
Turn-Off delay time	$t_{d(off)}$		-	166	-	ns
Turn-Off rise time	$t_f$		-	23	-	ns
Total Gate Charge	$Q_g$	$V_{DS}=720V, I_D=30A,$ $V_{GS}=10V$	-	62	-	nC
Gate-Source charge	$Q_{gs}$		-	15	-	nC
Gate-Drain charge	$Q_{gd}$		-	23	-	nC
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
Body Diode Forward Current	$I_{SD}$	$T_C=25^{\circ}C$	-	-	30	A
Body Diode Forward Voltage	$V_{SD}$	$I_{SD}=30A, V_{GS}=0V$	-	-	1.2	V
Reverse recovery time	$t_{rr}$	$V_R=400, I_F=30A$ $di_F/dt=100A/\mu s$	-	680	-	ns
Reverse recovery charge	$Q_{rr}$		-	9	-	$\mu C$
Peak Reverse Recovery Current	$I_{rrm}$		-	24	-	A

**Thermal Characteristic**

Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.52	$^{\circ}C/W$
Thermal Resistance, junction to Ambient	$R_{th(j-A)}$	62	$^{\circ}C/W$

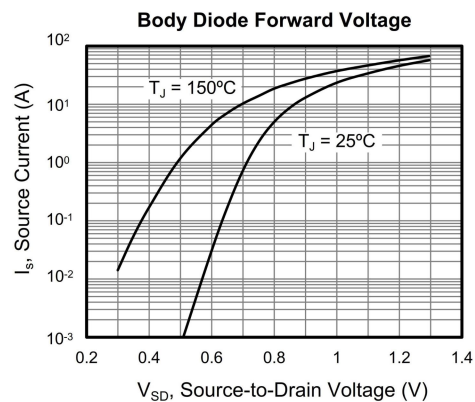
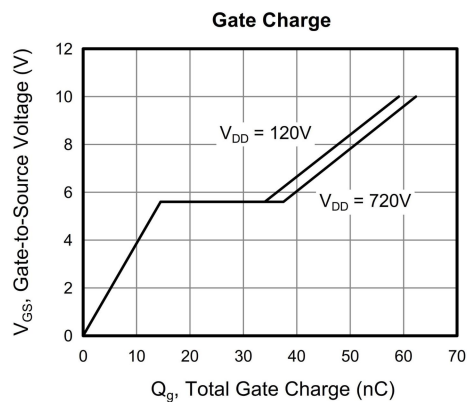
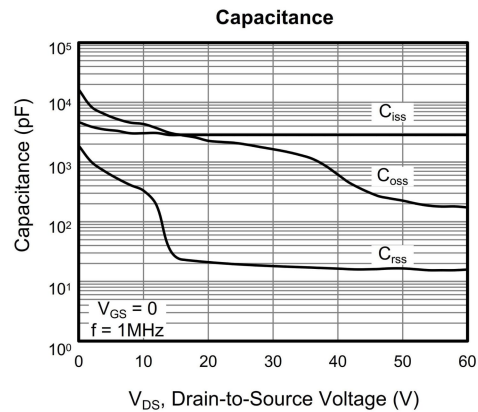
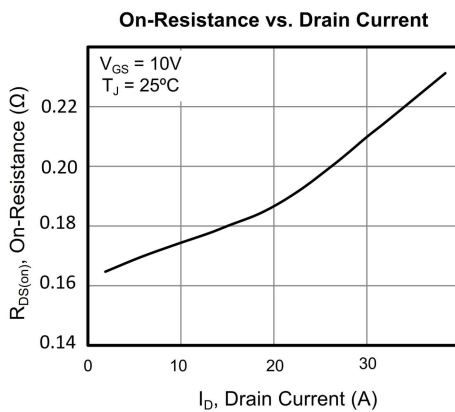
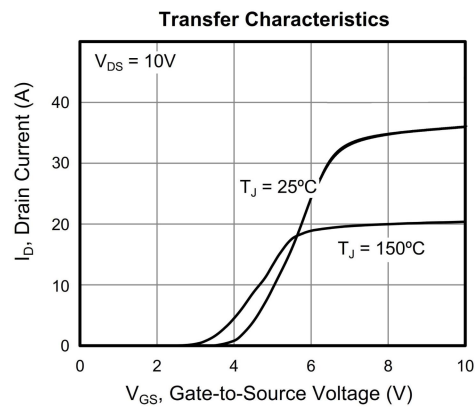
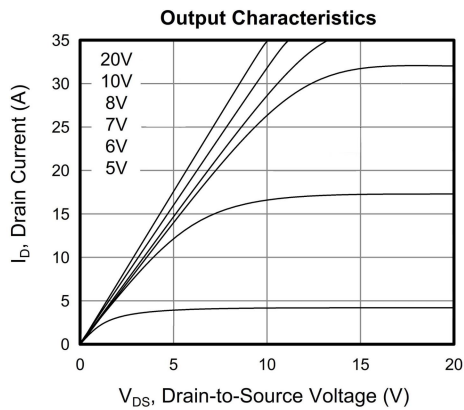
## Order Message

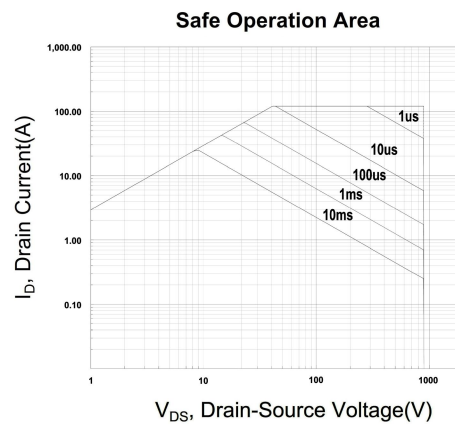
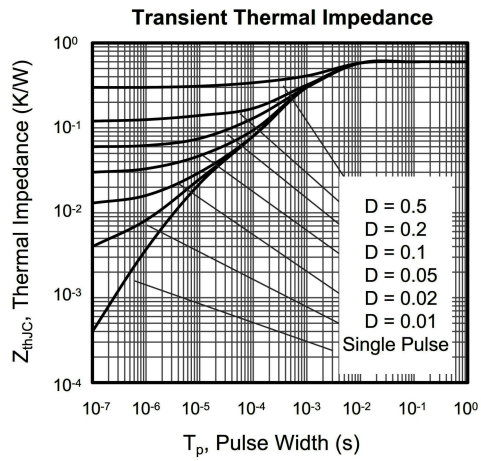
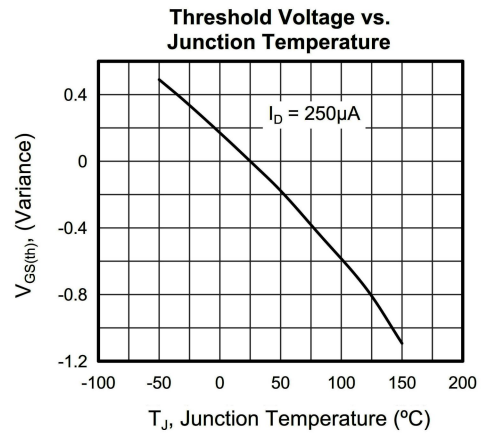
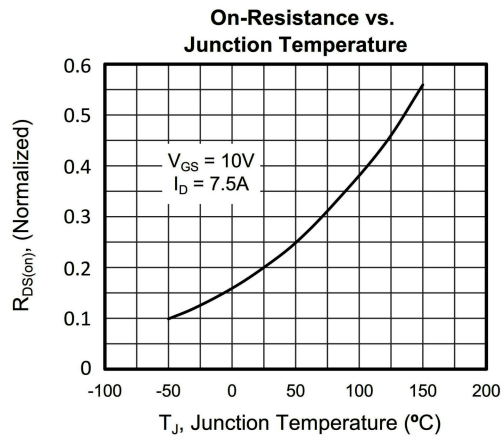
Marking	Package
MS30N90ICE0	TO-263
MS30N90ICC0	TO-247

### Notes:

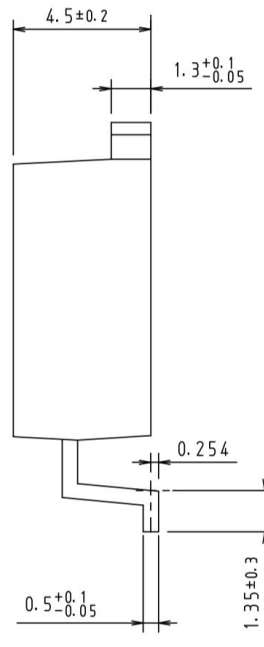
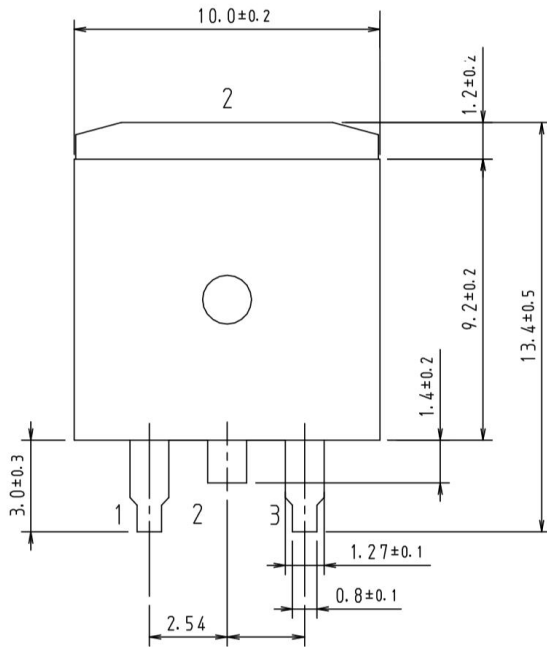
1. Repetitive Rating: Pulse width limited by maximum junction temperature
2.  $I_D = 10A$ ,  $V_{DD} = 50V$ ,  $R_G = 25\Omega$ , Starting  $T_J = 25^\circ C$
3. Identical low side and high side switch with identical  $R_G$

## Typical Characteristics ( $T_J = 25^\circ C$ , unless otherwise noted)

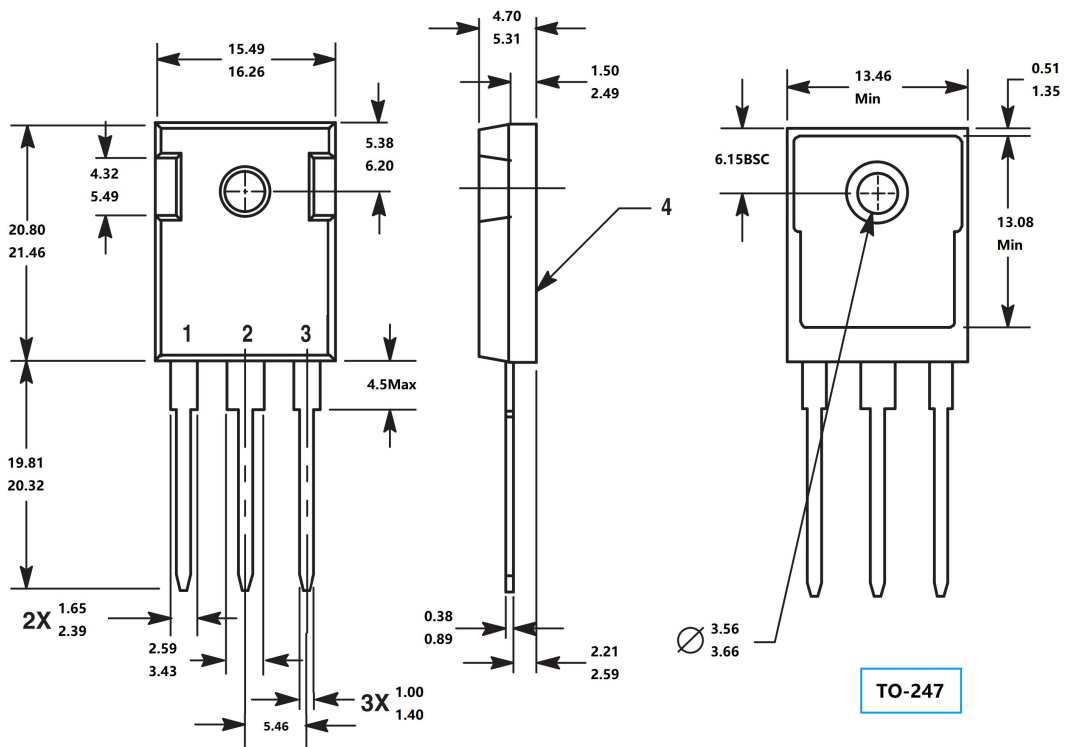




## Package Mechanical DATA



Unit:mm



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