

The GreenMOS<sup>®</sup> high voltage MOSFET utilizes charge balance technology to achieve outstanding low on-resistance and lower gate charge. It is engineered to minimize conduction loss, provide superior switching performance and robust avalanche capability.

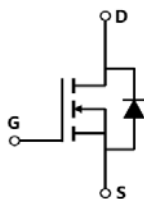
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Parameter	Value	Unit
$V_{DS, min} @ T_{j(max)}$	650	V
$I_D, pulse$	108	A

	66.8	nC
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Product Name	Package	Marking
OSG60R099KSZF	TO263	OSG60R099KSZ



**Absolute Maximum Ratings** at  $T_j=25$  unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-source voltage	$V_{DS}$	600	V
Gate-source voltage	$V_{GS}$	$\pm 30$	V
Continuous drain current <sup>1)</sup> , $T_C=25$ °C	$I_D$	36	A
Continuous drain current <sup>1)</sup> , $T_C=100$ °C		22.8	
Pulsed drain current <sup>2)</sup> , $T_C=25$ °C	$I_{D, pulse}$	108	A
Continuous diode forward current <sup>1)</sup> , $T_C=25$ °C	$I_S$	36	A
Diode pulsed current <sup>2)</sup> , $T_C=25$ °C	$I_{S, pulse}$	108	A
Power dissipation <sup>3)</sup> , $T_C=25$ °C	$P_D$	278	W
Single pulsed avalanche energy <sup>5)</sup>	$E_{AS}$	1000	mJ
MOSFET dv/dt ruggedness, $V_{DS}$	dv/dt	50	V/ns
Reverse diode dv/dt, $V_{DS}$	dv/dt	50	V/ns
Operation and storage temperature	$T_{stg}, T_j$	-55 to 150	°C

**Thermal Characteristics**

Parameter	Symbol	Value	Unit
Thermal resistance, junction-case	R	0.45	°C/W
Thermal resistance, junction-ambient <sup>4)</sup>	R	62	°C/W

**Electrical Characteristics** at  $T_j=25$  unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Drain-source breakdown voltage	$BV_{DSS}$	600			V	$V_{GS}=0$ V, $I_D=1$ mA
		650				$V_{GS}=0$ V, $I_D=1$ mA, $T_j=150$ °C
Gate threshold voltage	$V_{GS(th)}$	3.0		4.5	V	$V_{DS}=V_{GS}$ , $I_D=1$ mA
Drain-source on-state resistance	$R_{DS(ON)}$		0.082	0.099		$V_{GS}=10$ V, $I_D=18$ A
			0.20			$V_{GS}=10$ V, $I_D=18$ A, $T_j=150$ °C
Gate-source leakage current	$I_{GSS}$			100	nA	$V_{GS}=30$ V
				-100		$V_{GS}=-30$ V
Drain-source leakage current	$I_{DSS}$			10	A	$V_{DS}=600$ V, $V_{GS}=0$ V
Gate resistance	$R_G$		8			, Open drain

**OSG60R099KSZF**

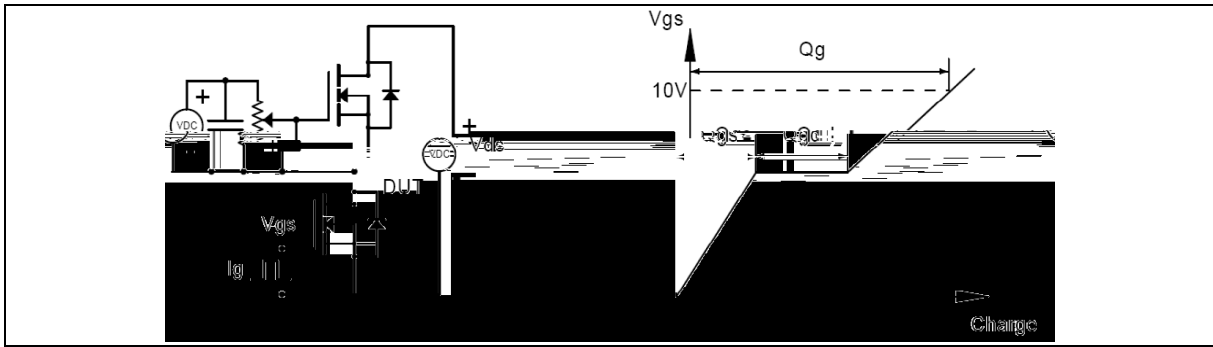
Enhancement Mode N-Channel Power MOSFET



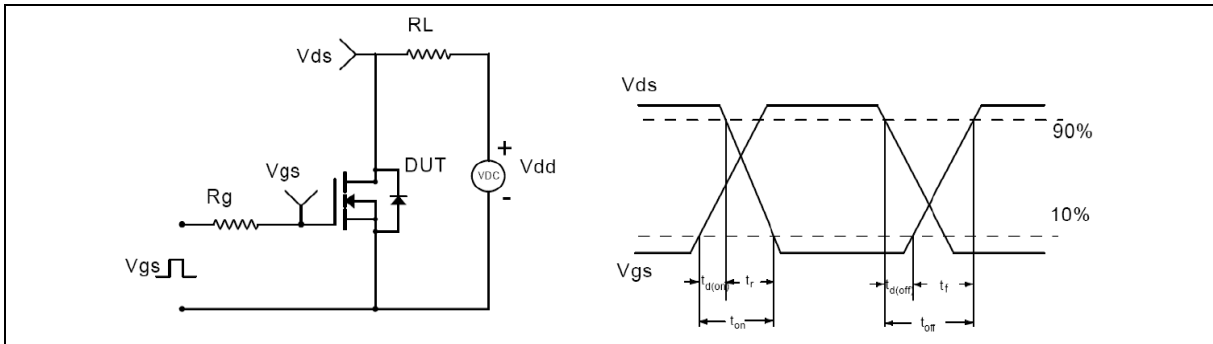




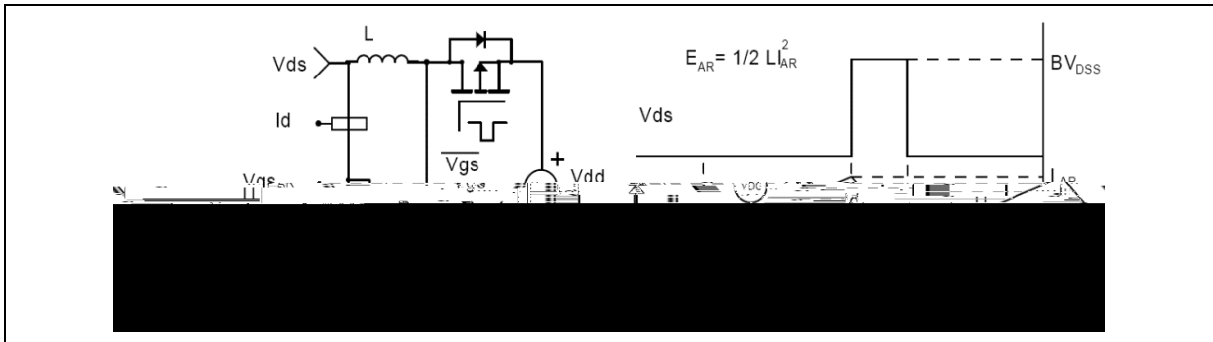
**Test circuits and waveforms**



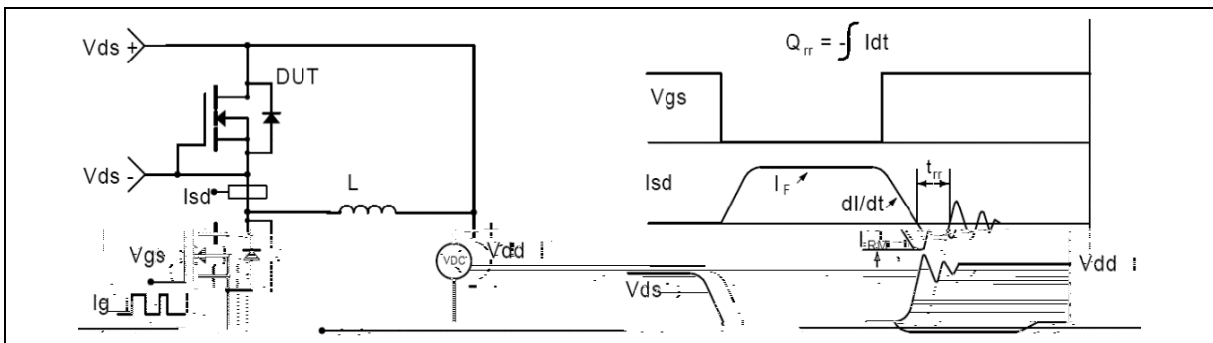
**Figure 1. Gate charge test circuit & waveform**



**Figure 2. Switching time test circuit & waveforms**

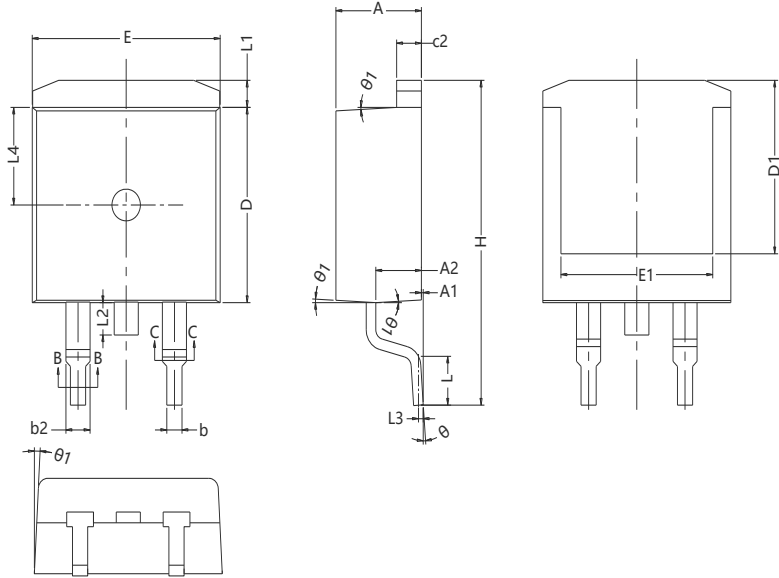


**Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms**



**Figure 4. Diode reverse recovery test circuit & waveforms**

**Package Information**



Symbol	mm		
	Min	Nom	Max
A	4.40	4.50	4.60
A1	0.00	0.10	0.25
A2	2.20	2.40	2.60
b	0.76	-	0.89
b1	0.75	0.80	0.85
b2	1.23	-	1.37
b3	1.22	1.27	1.32
c	0.47	-	0.60
c1	0.46	0.51	0.56
c2	1.25	1.30	1.35
D	9.10	9.20	9.30
D1	8.00	-	-
E	9.80	9.90	10.00
E1	7.80	-	-
e	2.54 BSC		
H	14.90	15.30	15.70
L	2.00	2.30	2.60
L1	1.17	1.27	1.40
L2	-	-	1.75
L3	0.25 BSC		
L4	4.60 REF		
	0°	-	8°
	1°	3°	5°

Version 2: package outline dimension

**Ordering Information**

Package Type	Units/ Reel	Reels / Inner Box	Units/ Inner Box	Inner Boxes/ Carton Box	Units/ Carton Box
TO263-J	800	1	800	10	8000

**Product Information**

Product	Package	Pb Free	RoHS	Halogen Free
OSG60R099KSZF	TO263	yes	yes	yes