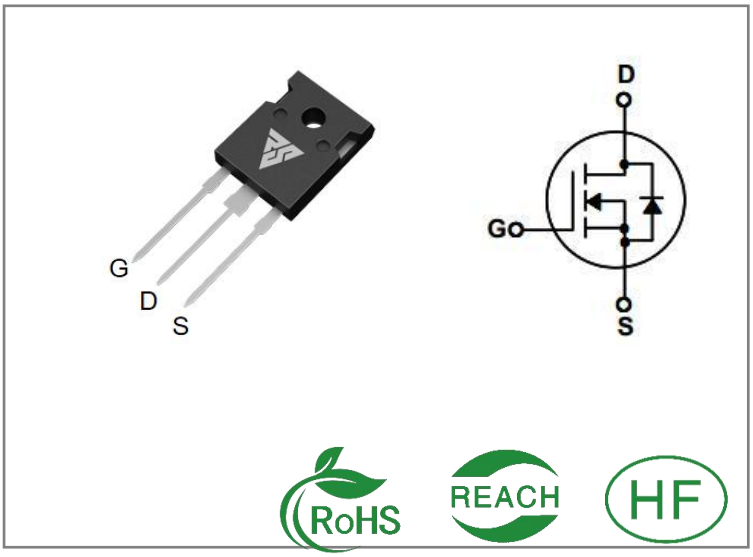
ID	R_{DS}(ON)(Typ)	VDSS
72A	33mΩ	600V



Applications:

- EV Charger
- LED/LCD/PDP TV and monitor Lighting
- Power Supply
- Inverter

Features:

- Fast switching speed
- 100% avalanche tested
- Improved dv/dt capability
- Fast Recovery Time

Ordering Information

Part Number	Package	Marking	Packing	Qty.
RSF60T038W	T0-247-3	RSF60T038W	Tube	30 PCS

Absolute Maximun Ratings Tc= 2 5℃ unless otherwise specified

Symbol	Parameter	RSF60T038W	Units
VDSS	Drain-to-Source Voltage	600	V
ID	Continuous Drain Current TC=25℃	72	A
ID	Continuous Drain Current TC=100℃	46	
IDM	Pulsed Drain Current (Note*1)	288	
PD	Power Dissipation	379	W
VGS	Gate- to- Source Voltage	±30	V
EAS	Single Pulse Avalanche Engergy VDD = 50V, RG = 25 Ω，TC=25℃	1400	mJ
dv/dt	Reverse diode dv/dt VDS = 0...480V, Tj = 25℃, ISD≤ID	50	V/ns
TL TPKG	Maximum Temperature for Soldering	300	℃
	Leads at 0.063in(1.6mm)from Case for 10 seconds Package Body for 10 seconds	260	
TJ and TSTG	Operating Junction and Storage Temperature Range	-55 to 150	

* Drain Current Limited by Maximum Junction Temperature

Caution: Stresses greater than those listed in the“ Absolute Maximum Ratings” Table may cause permanent damage to the device.

Thermal Resistance

Symbol	Parameter	RSF60T038W	Units	Test Conditions
RθJC	Junction-to-Case	0.33	℃/ W	Drain lead soldered to water cooled heatsink, PD adjusted for a peak junction temperature of + 1 5 0 ℃
RθJA	Junction-to- Ambient	50		1 cubic foot chamber,free air.

OFF Characteristics TJ= 25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
BVDSS	Drain- to- source Breakdown Voltage	600	--	--	V	VGS=0V ID=1mA
IDSS	Drain- to- Source Leakage Current	--	--	10	μA	VDS=600V VGS=0V
IGSS	Gate- to- Source Forward Leakage	--	--	100	nA	VGS=30V VDS=0V
	Gate- to- Source Reverse Leakage	--	--	-100		VGS=-30V VDS=0V

ON Characteristics TJ=25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
RDS(on)	Static Drain- to- Source On-Resistance	--	33	38	mΩ	VGS=10V ID=36A
VGS(TH)	Gate Threshold Voltage	3	4	5	V	VGS=VDS ID=2mA

Resistive Switching Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
td(ON)	Turn- on Delay Time	--	30	--	nS	VDS=400V ID=25A VGS=10V RG=3Ω
trise	Rise Time	--	30	--		
td(OFF)	Turn- OFF Delay Time	--	73	--		
tfall	Fall Time	--	21	--		

Dynamic Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
Ciss	Input Capacitance	--	4693	--	pF	VGS=0V VDS=100V f=100KHz
Coss	Output Capacitance	--	137	--		
Crss	Reverse Transfer Capacitance	--	2.7	--		
Qg	Total Gate Charge	--	95	--	nC	VDS=480V ID=25A VGS=10V
Qgs	Gate- to- Source Charge	--	33	--		
Qgd	Gate-to-Drain(" Miller") Charge	--	37	--		

Source- Drain Diode Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
IS	Continuous Source Current	--	--	72	A	Integral pn- diode in MOSFET
ISM	Maximum Pulsed Current	--	--	288	A	
VSD	Diode Forward Voltage	--	--	1.4	V	IS=36A VGS=0V
trr	Reverse Recovery Time	--	121	--	nS	VR=400V IS=25A di/dt=100A/μs
Qrr	Reverse Recovery Charge	--	0.6	--	uC	

Notes:

* 1. Repetitive rating, pulse width limited by maximum junction temperature.

Typical Feature Curve

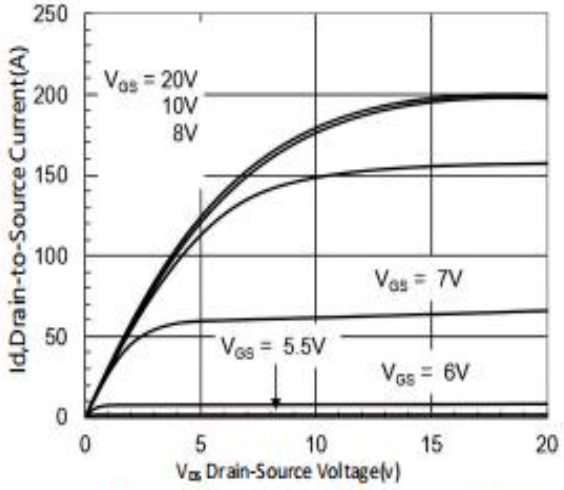


Figure1. Typical Output Characteristics

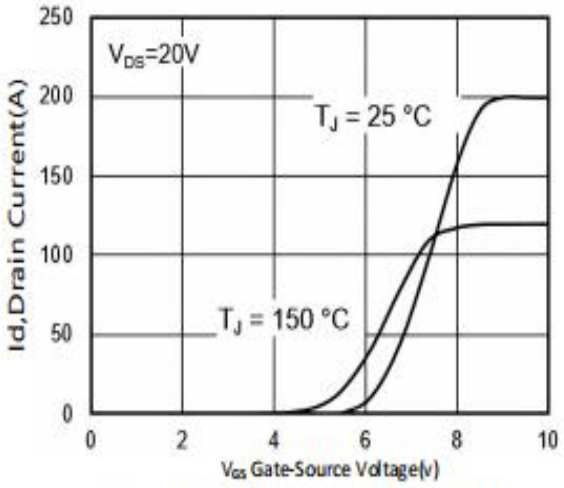


Figure2. Typical Transfer Characteristics

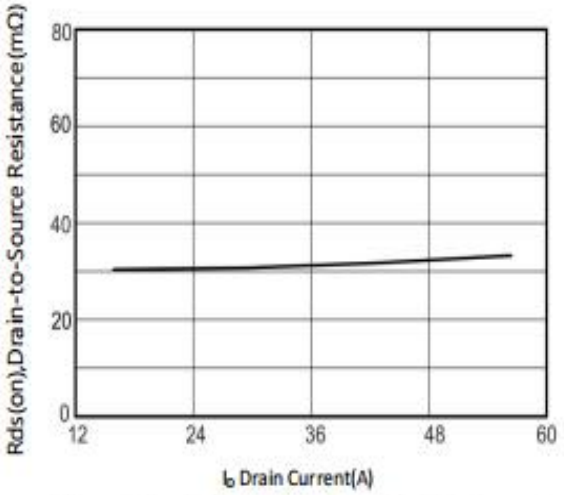


Figure3. On-Resistance versus Drain Current

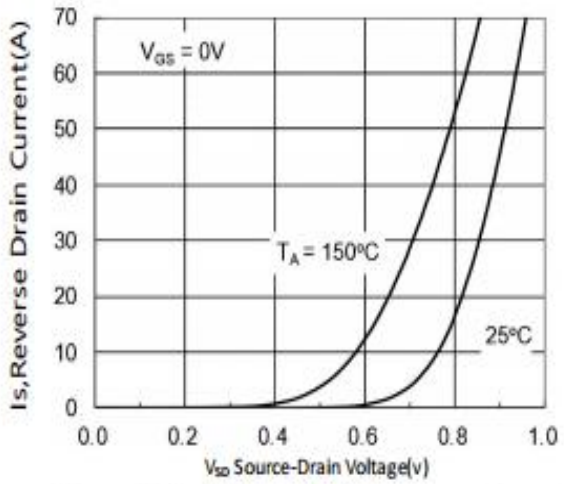


Figure4. Diode forward voltage versus Current

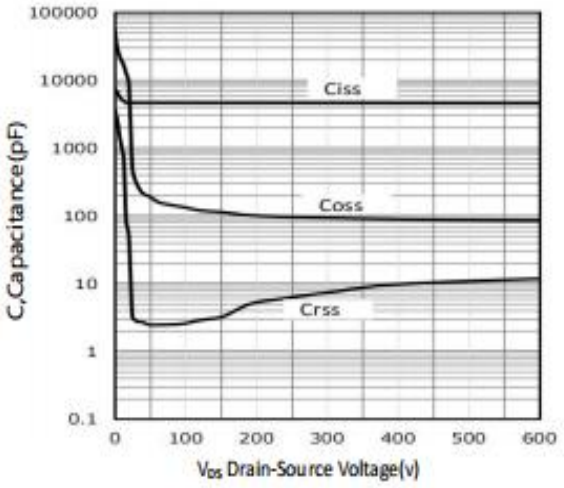


Figure5. Typical Capacitance versus V_{DS}

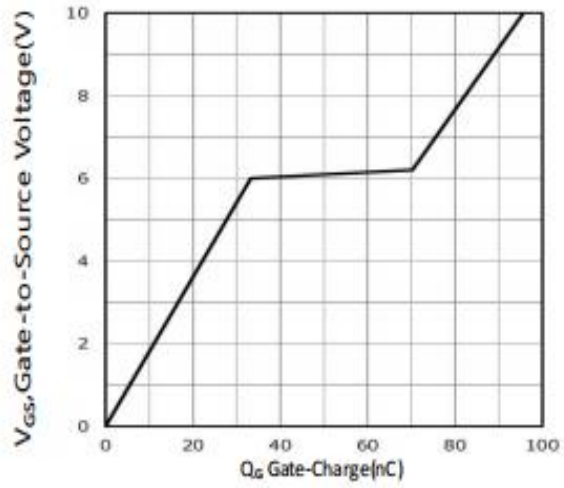


Figure6. Typical Gate Charge versus V_{GS}

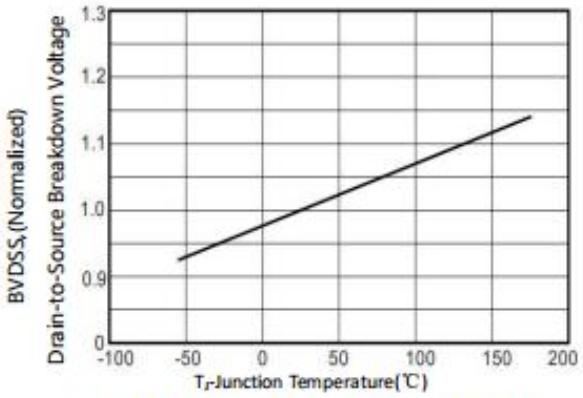


Figure7. BV_{DSS} Variation with Temperature

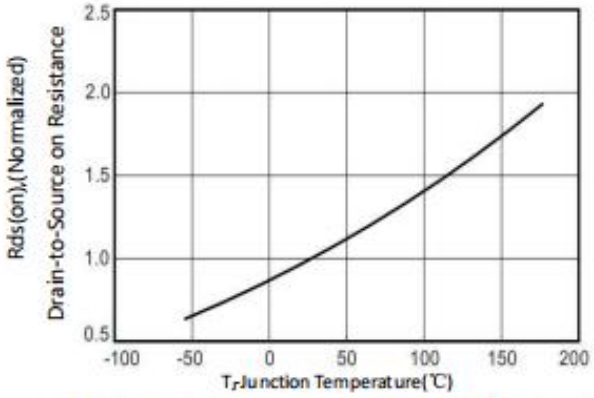


Figure8. On-Resistance Variation with Temperature

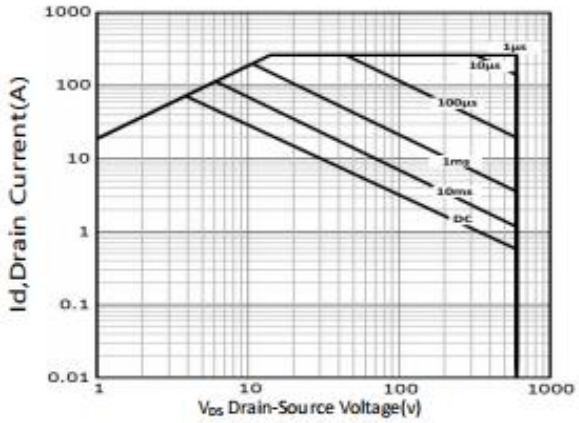


Figure9. Maximum Safe Operating Area

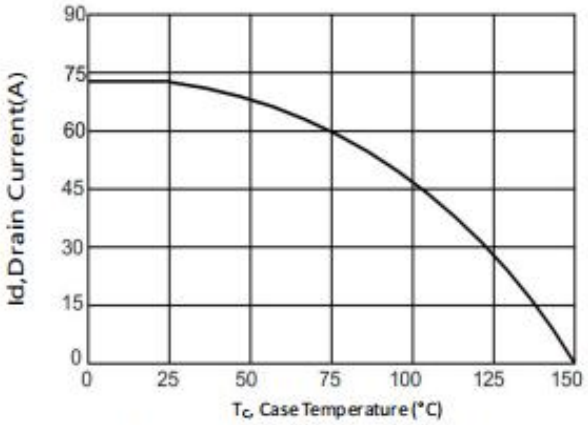
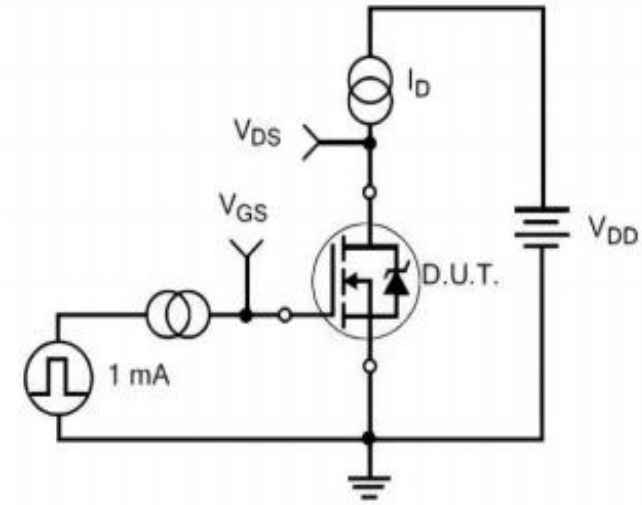
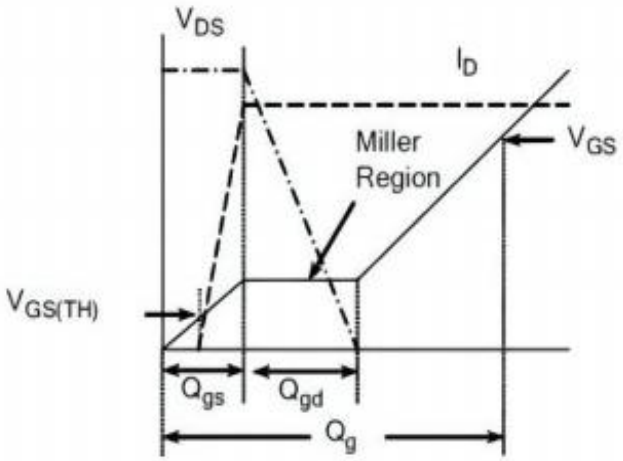


Figure10. Maximum Continuous Drain versus Case Temperature

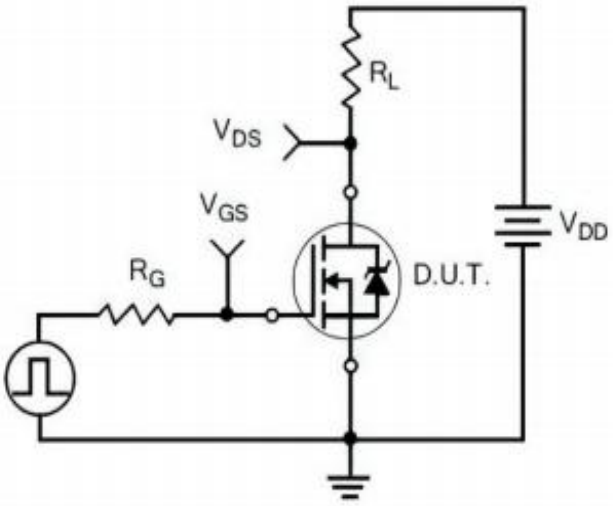
Test Circuits and Waveforms



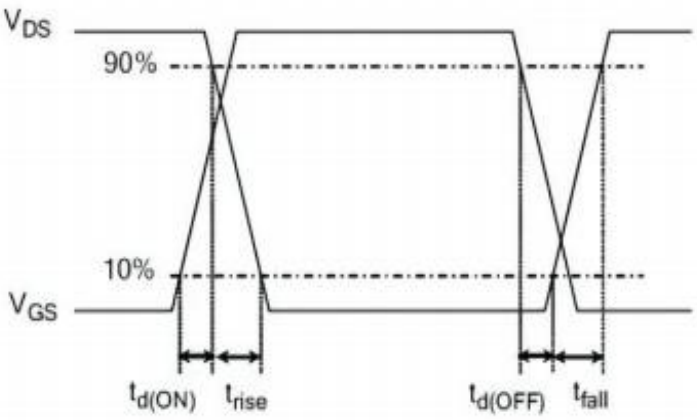
Gate Charge Test Circuit



Gate Charge Waveform

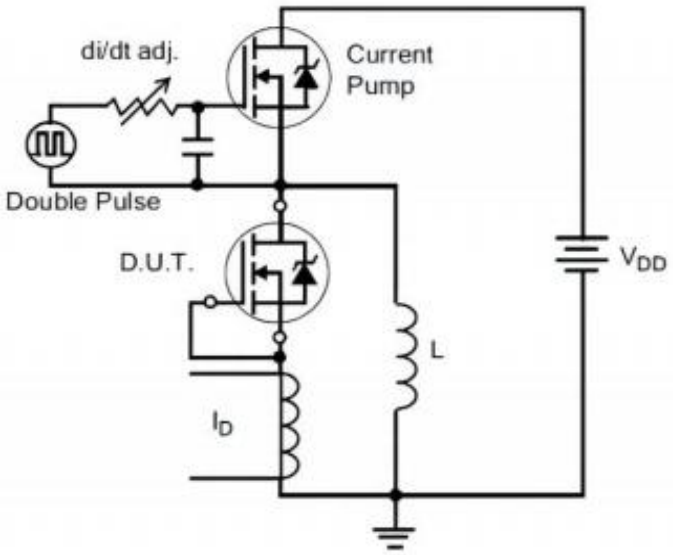


Resistive Switching Test Circuit

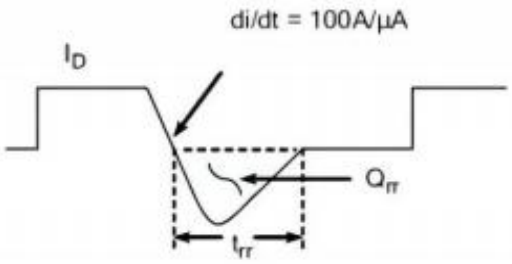


Resistive Switching Waveforms

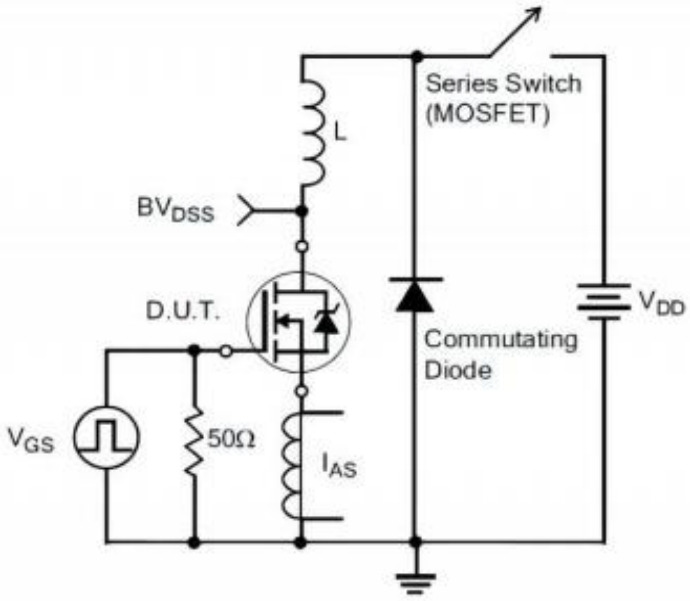
Test Circuits and Waveforms



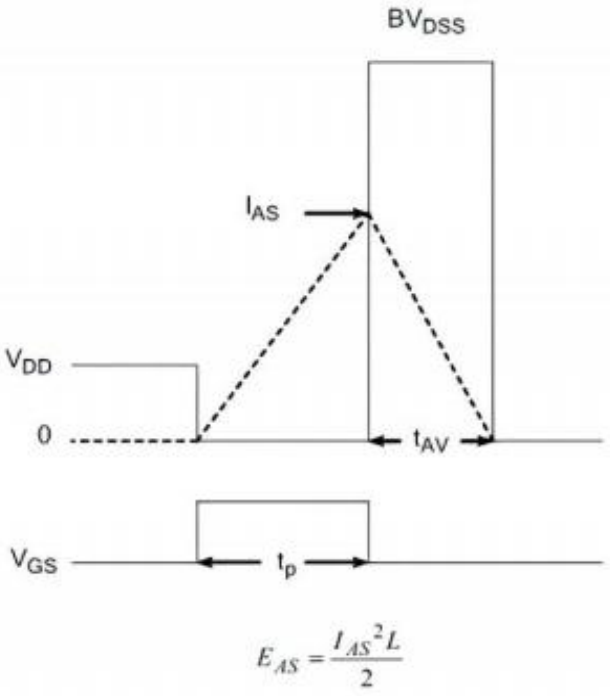
Diode Reverse Recovery Test Circuit



Diode Reverse Recovery Waveform



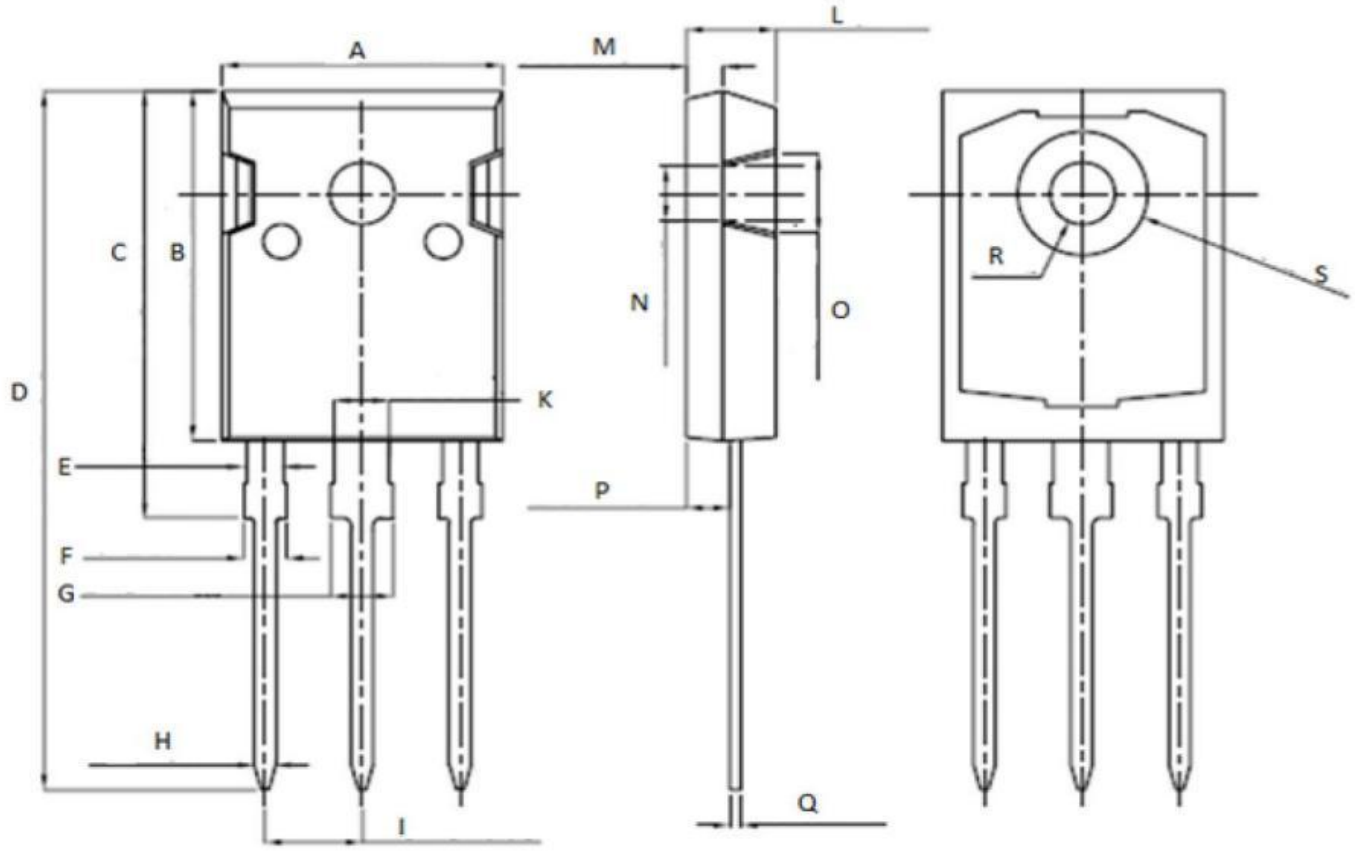
Unclamped Inductive Switching Test Circuit



Unclamped Inductive Switching Waveforms

Package outline drawing(TO-247-3 Unit: mm)

TO-247



Unit: mm		
Symbol	Min.	Max.
A	15.95	16.25
B	20.85	21.25
C	20.95	21.35
D	40.5	40.9
E	1.9	2.1
F	2.1	2.25
G	3.1	3.25
H	1.1	1.3
I	5.40	5.50

Unit: mm		
Symbol	Min.	Max.
K	2.90	3.10
L	4.90	5.30
M	1.90	2.10
N	4.50	4.70
O	5.40	5.60
P	2.29	2.49
Q	0.51	0.71
R	ϕ3.5	ϕ3.7
S	ϕ7.1	ϕ7.3

Disclaimers:

Reasunos Semiconductor Technology Co.Ltd (Reasunos) reserves the right to make changes without notice in order to improve reliability,function or design and to discontinue any product or service without notice .Customers should obtain the latest relevant information before orders and should verify that such information in current and complete.All products are sold subject to Reasunos's terms and conditions supplied at the time of orderacknowledgement.

Reasunos Semiconductor Technology Co.Ltd warrants performance of its hardware products to the speciffications at the time of sale.Testing,reliability and quality control are used to the extene Reasunos deems necessary to support this warrantee. Except where agreed upon by contr- actual agreement,testing of all parameters of each product is not necessarily performed.

Reasunos Semiconductor Technology Co.Ltd does not assume any liability arising from the use of any product or circuit designs described herein.Customers are responsible for their products and applications using Reasunos's components.To minimize risk,customers must provide adequate design and operating safeguards.

Reasunos Semiconductor Technology Co.Ltd does not warrant or convey any license eith- er expressed or implied under its patent rights,nor the rights of others.Reproduction of inform- ation in Reasunos's data sheeets or data books is permissible only if reproduction is without modification oralteration.Reproduction of this information with any alteration is an unfair and deceptive business practice. Reasunos Semiconductor Technology Co.Ltd is not responsi- ble or liable for such altered documentation.

Resale of Reasunos's products with statements different from or beyond the parameters stated by Reasunos Semiconductor Technology Co.Ltd for that product or service voids all exp- ress or implied warrantees for the associated Reasunos's product or service and is unfair and deceptive business practice. Reasunos Semiconductor Technology Co.Ltd is not responsi- ble or liable for such statements.

Life Support Policy:

Reasunos Semiconductor Technology Co.Ltd's Products are not authorized for use as cri- tical components in life support devices or systems without the expressed written approval of Reasunos Semiconductor Technology Co.Ltd.
As used herein:
1. Life support devices or systems are devices or systems which: a.are intended for surgical implant into the human body, b.support or sustain life,c.whose failuer to when properly used in accordance with instructions for used provided in the laeling,can be reasonably expected to result in significant injury to the user.

2.A critical component is any component of a life support device or system whose failure to system whose failure to perform can be reasonably expected to cause the failure of the life support device or system,or to affect its safety or effectiveness.