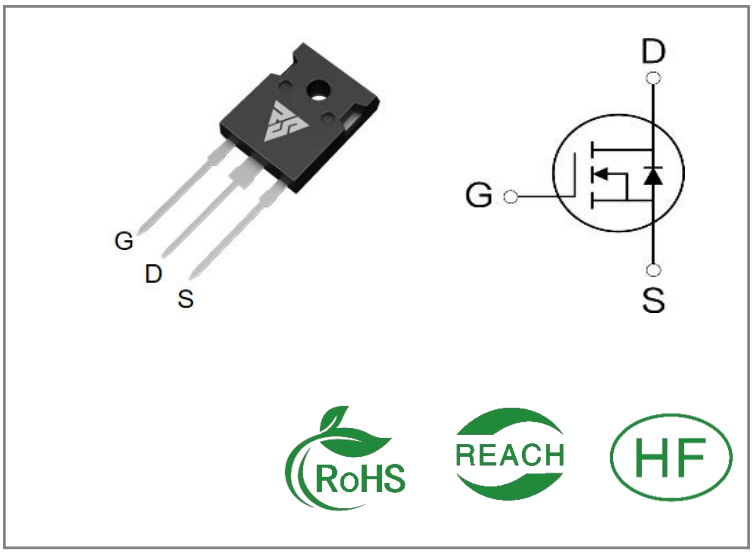
ID	R_{DS}(ON)(Typ)	VDSS
100A	20mΩ	600V



Applications:

- Switch Mode Power Supply(SMPS)
- Uninterruptible Power Supply (UPS)
- Power Factor Correction (PFC)
- AC-DC Switching Power Supply

Features:

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

Ordering Information

Part Number	Package	Marking	Packing	Qty.
RSF60R026W	T0-247-3	RSF60R026W	Tube	30 PCS

Absolute Maximun Ratings Tc= 2 5℃ unless otherwise specified

Symbol	Parameter	RSF60R026W	Units
VDSS	Drain-to-Source Voltage	600	V
ID	Continuous Drain Current TC=25℃	100	A
ID	Continuous Drain Current TC=100℃	63.3	
IDM	Pulsed Drain Current (Note*1)	300	
PD	Power Dissipation	694	W
VGS	Gate- to- Source Voltage	±30	V
EAS	Single Pulse Avalanche Engergy	3000	mJ
dv/dt	MOSFET dv/ dt ruggedness VDS = 0...400V	50	V/ns
dv/dt	Reverse diode dv/dt VDS = 0...400V, Tj = 25℃, ISD≤ID	15	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	RSF60R026W	Units	Test Conditions
RθJC	Junction-to-Case	0.18	℃/W	Drain lead soldered to water cooled heatsink, PD adjusted for a peak junction temperature of + 1 5 0 ℃
RθJA	Junction-to-Ambient	33		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=250μA
IDSS	Drain- to- Source Leakage Current	--	--	10	μA	VDS=600V,VGS=0 V
IGSS	Gate- to- Source Forward Leakage	--	--	100	nA	VGS=30V ,VDS=0V
	Gate- to- Source Reverse Leakage	--	--	-100		VGS=-30V ,VDS=0 V

ON Characteristics TJ=25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
RDS(on)	Static Drain- to- Source On-Resistance(Note*2)	--	20	26	mΩ	VGS=10V,ID=40A
VGS(TH)	Gate Threshold Voltage	3.2	4	4.5	V	VGS=VDS,ID=1mA

Resistive Switching Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
td(ON)	Turn- on Delay Time	--	56	--	nS	VDS=400V ID=40A RG=2Ω
trise	Rise Time	--	57	--		
td(OFF)	Turn- OFF Delay Time	--	117	--		
tfall	Fall Time	--	5.8	--		

Dynamic Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
Ciss	Input Capacitance	--	9317	--	pF	VGS=0V VDS=50V f=1.0MHz
Coss	Output Capacitance	--	372	--		
Crss	Reverse Transfer Capacitance	--	7.6	--		
Qg	Total Gate Charge	--	192	--	nC	VDS=480V ID=50A VGS=10V
Qgs	Gate- to- Source Charge	--	60	--		
Qgd	Gate-to-Drain(" Miller") Charge	--	77	--		

Source- Drain Diode Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
IS	Continuous Source Current	--	--	100	A	Integral pn- diode in MOSFET
ISM	Maximum Pulsed Current	--	--	300	A	
VSD	Diode Forward Voltage	--	--	1.2	V	IS=50A,VGS=0V
trr	Reverse Recovery Time	--	209	--	nS	VR=300V IS=50A,di/dt=100A /μs
Qrr	Reverse Recovery Charge	--	2.2	--	μC	

Notes:

* 1. Repetitive rating, pulse width limited by maximum junction temperature.
* 2. Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤ 1%

Typical Feature Curve

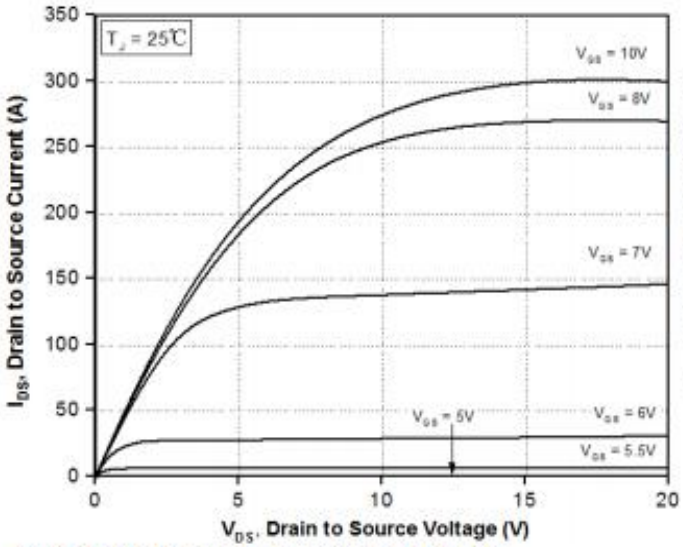


Fig1. Output characteristics T_J= 25°C

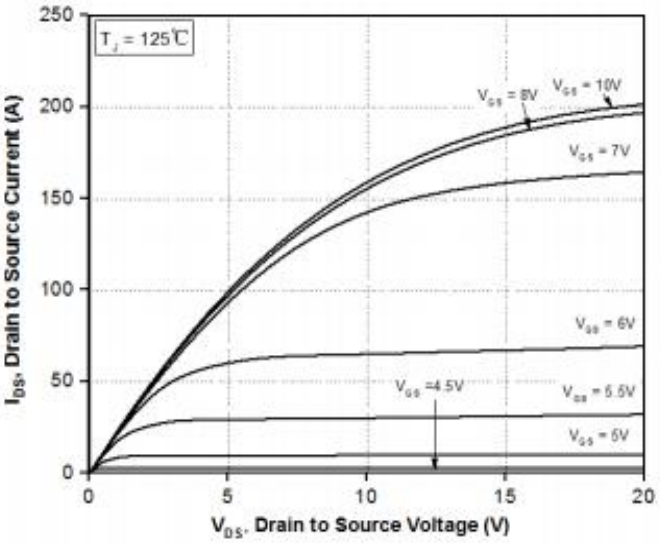


Fig2. Output characteristics T_J= 125°C

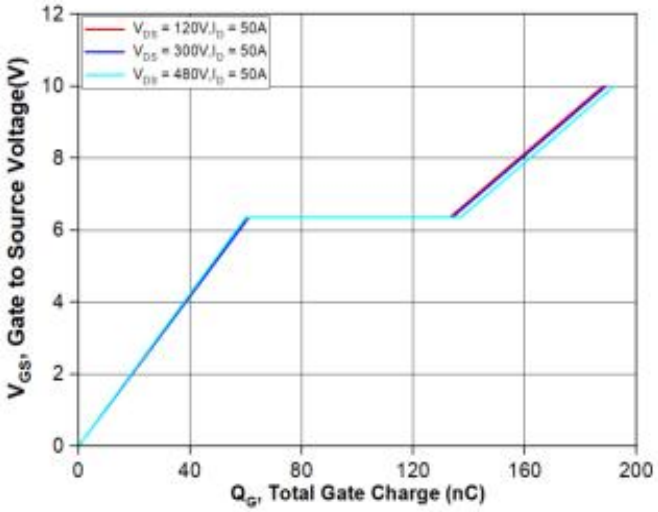


Fig3. Gate charge characteristics

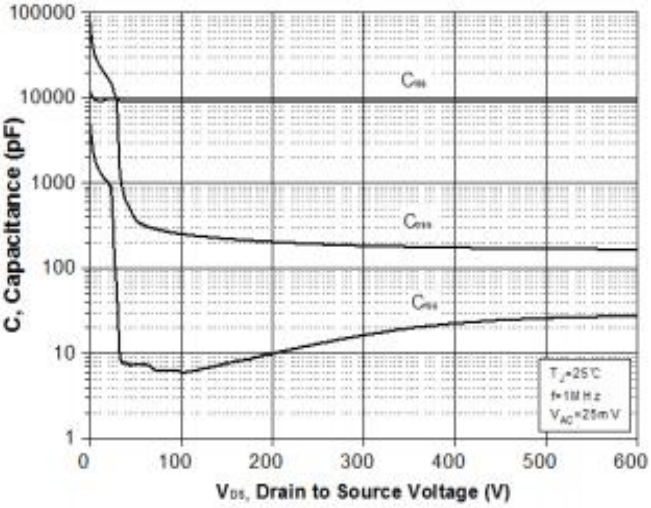


Fig 4. Capacitance Characteristics

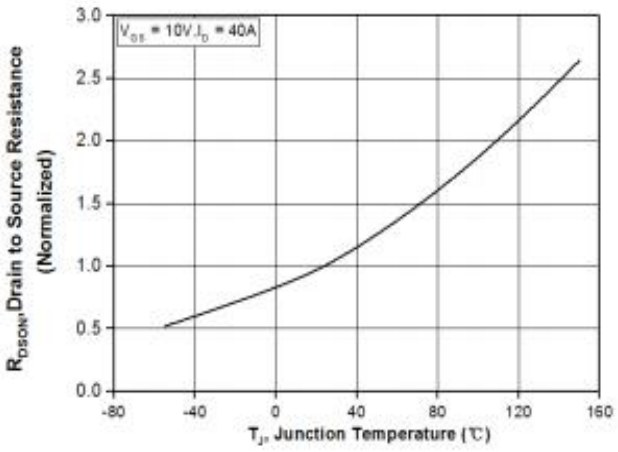


Fig 5. $R_{DS(ON)}$ vs junction temperature

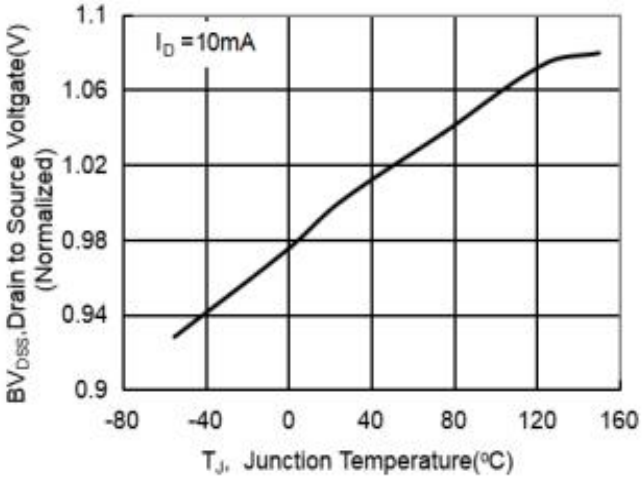


Fig 6. BV_{DSS} vs junction temperature

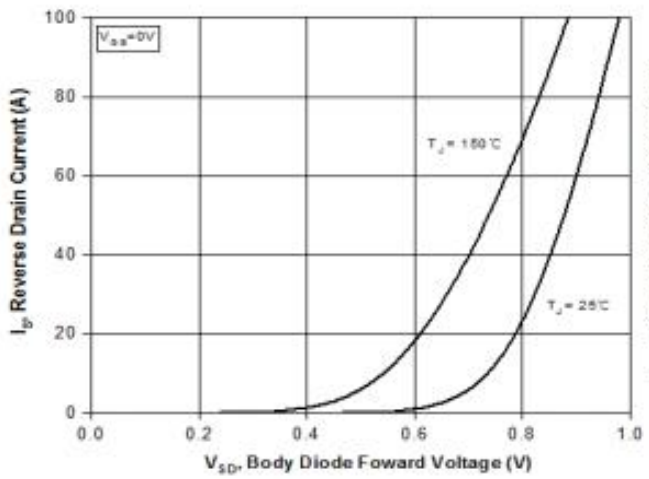


Fig 7 . Forward characteristics of reverse diode

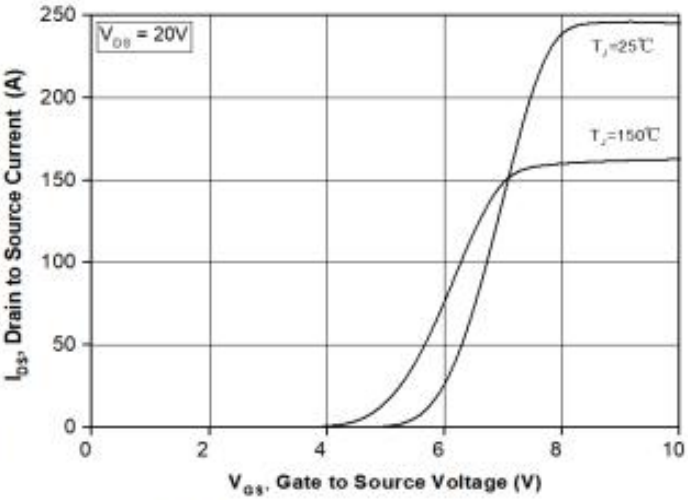


Fig 8 . Transfer characteristics

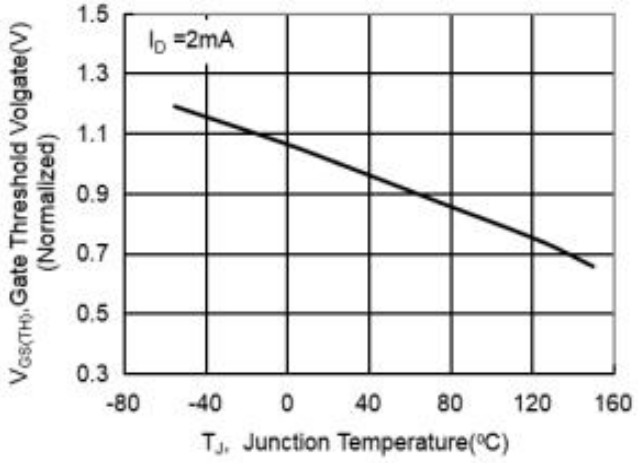


Fig 9 . $V_{GS(TH)}$ vs junction temperature

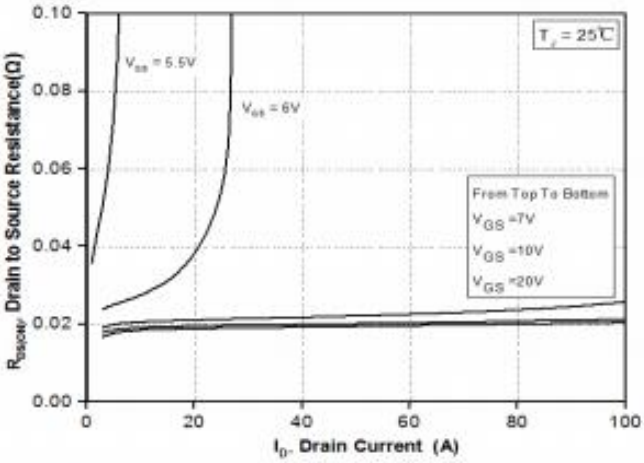


Fig 10. Drain-source on-state resistance T_J= 25°C

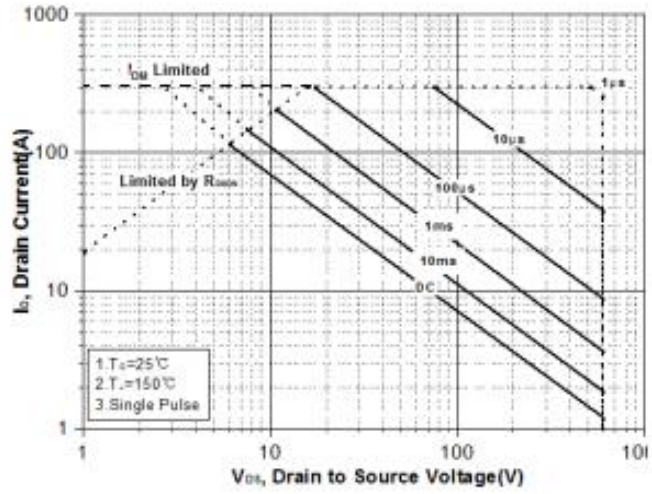


Fig 11. Safe operating area(TO-247) Tc= 25°C

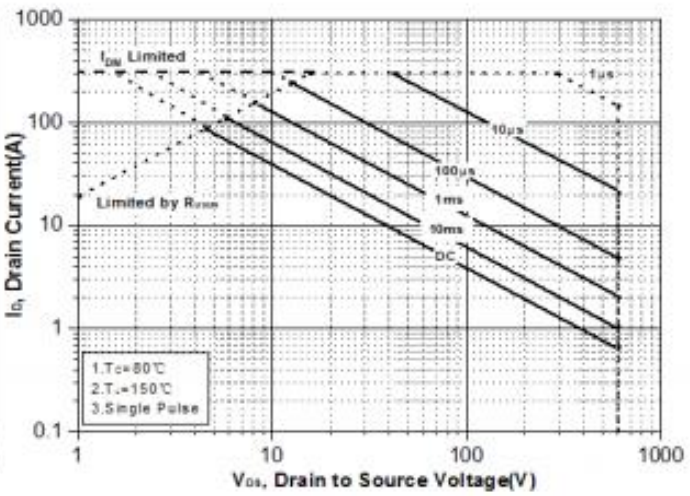


Fig 12. Safe operating area(TO-247) Tc= 80°C

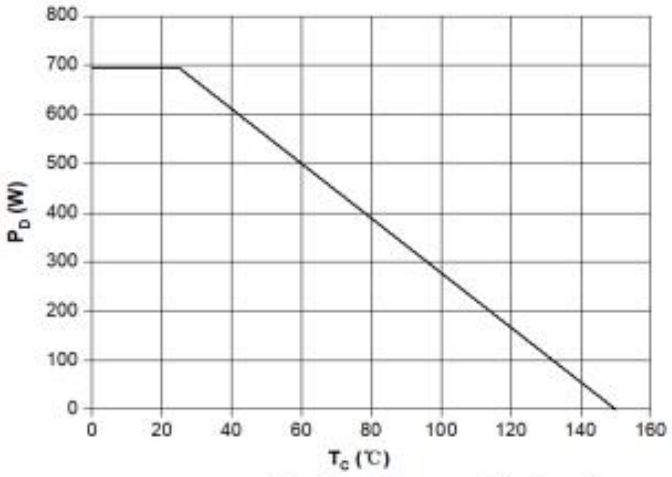


Fig 13 . Power dissipation

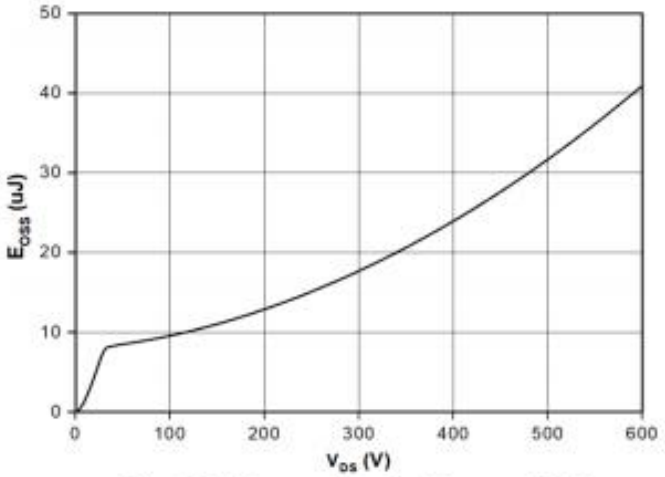


Fig 14 . Eoss vs Drain-Source Voltage

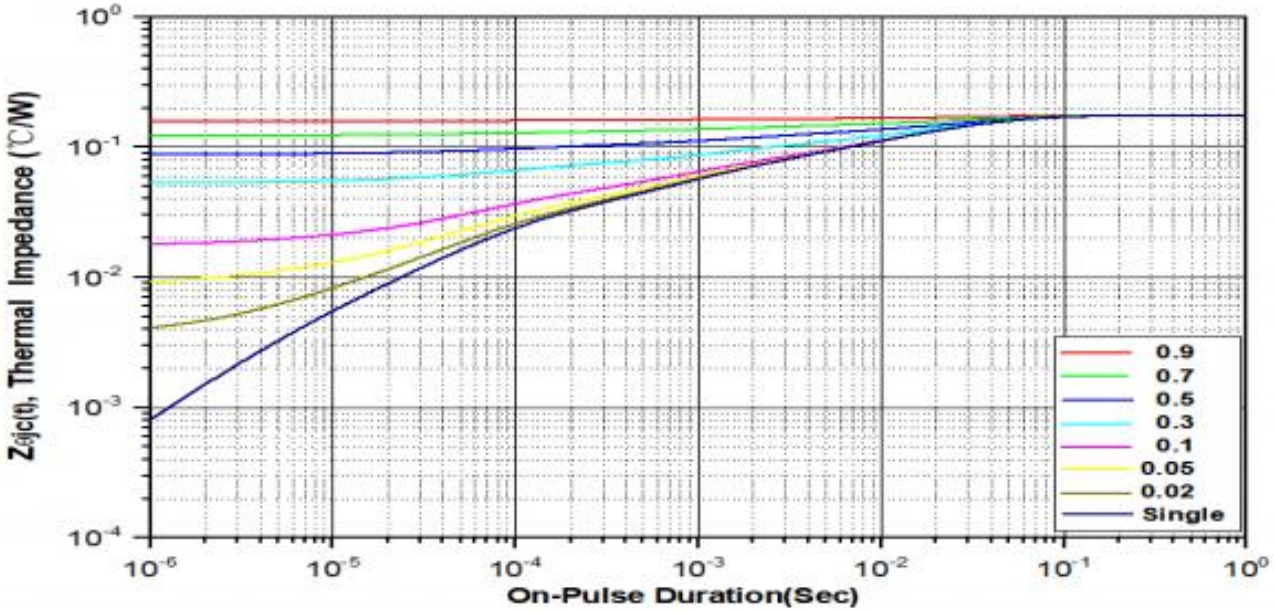


Fig 15. Transient thermal impedance

Test Circuits and Waveforms

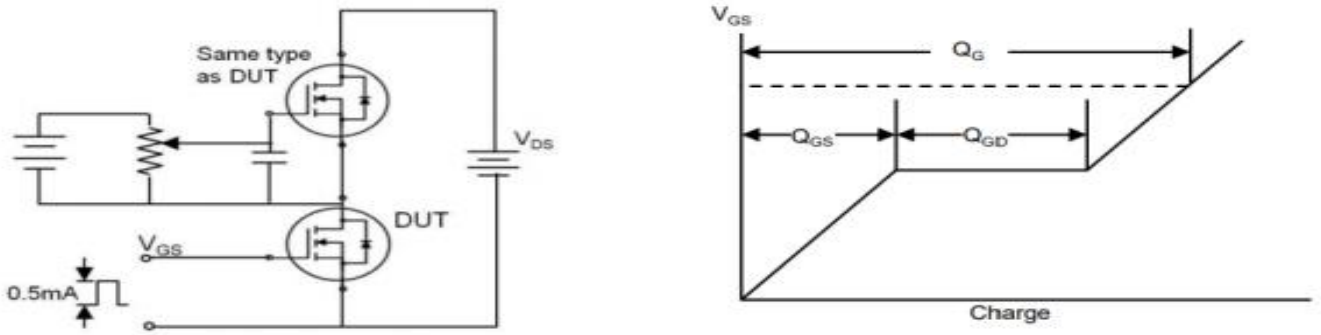


Fig 16. Gate charge test circuit & waveform

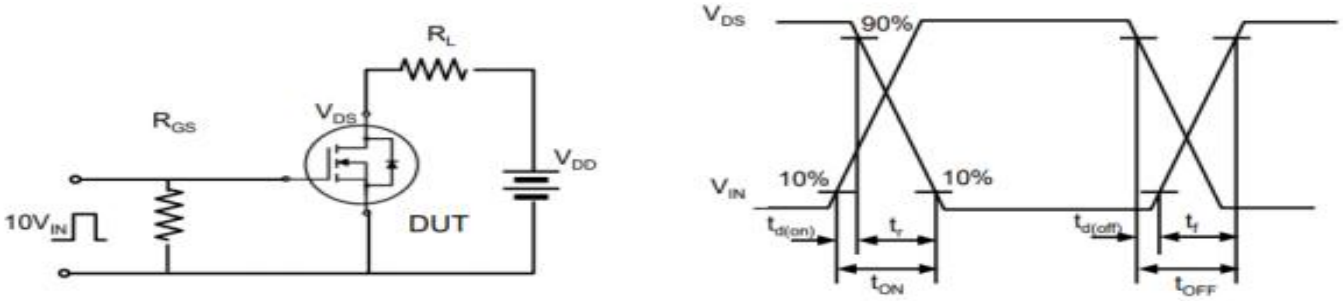


Fig 17. Switching time test circuit & waveform

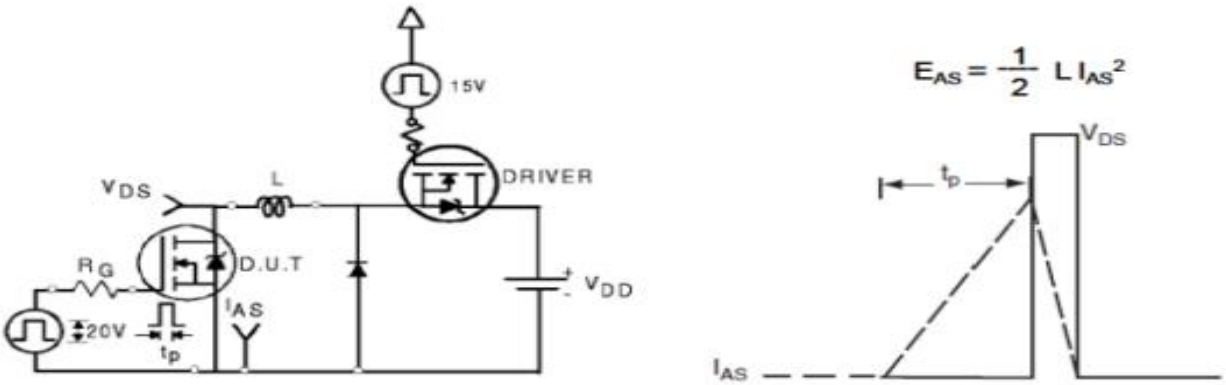


Fig 18. Unclamped Inductive switching test circuit & waveform

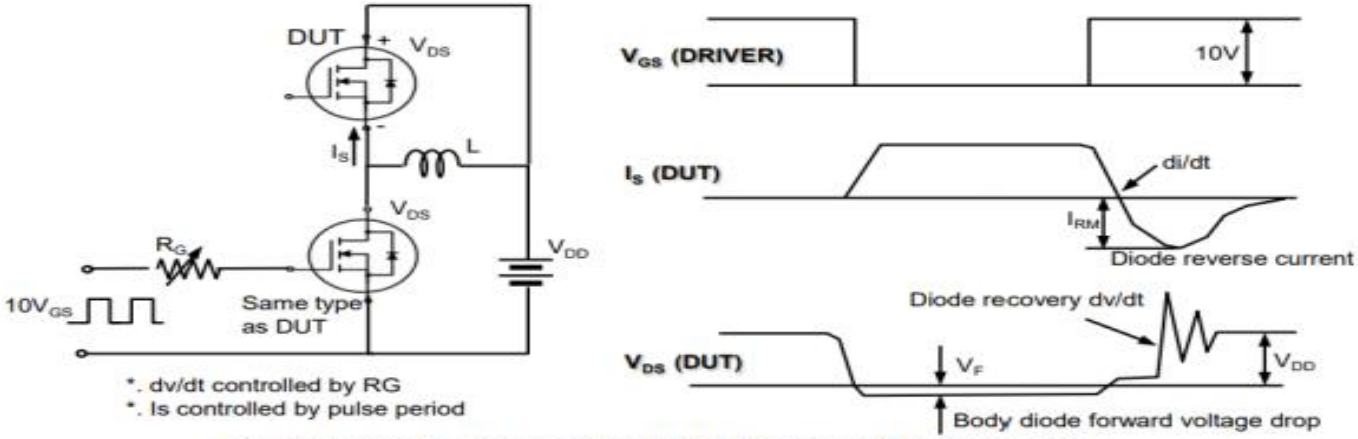
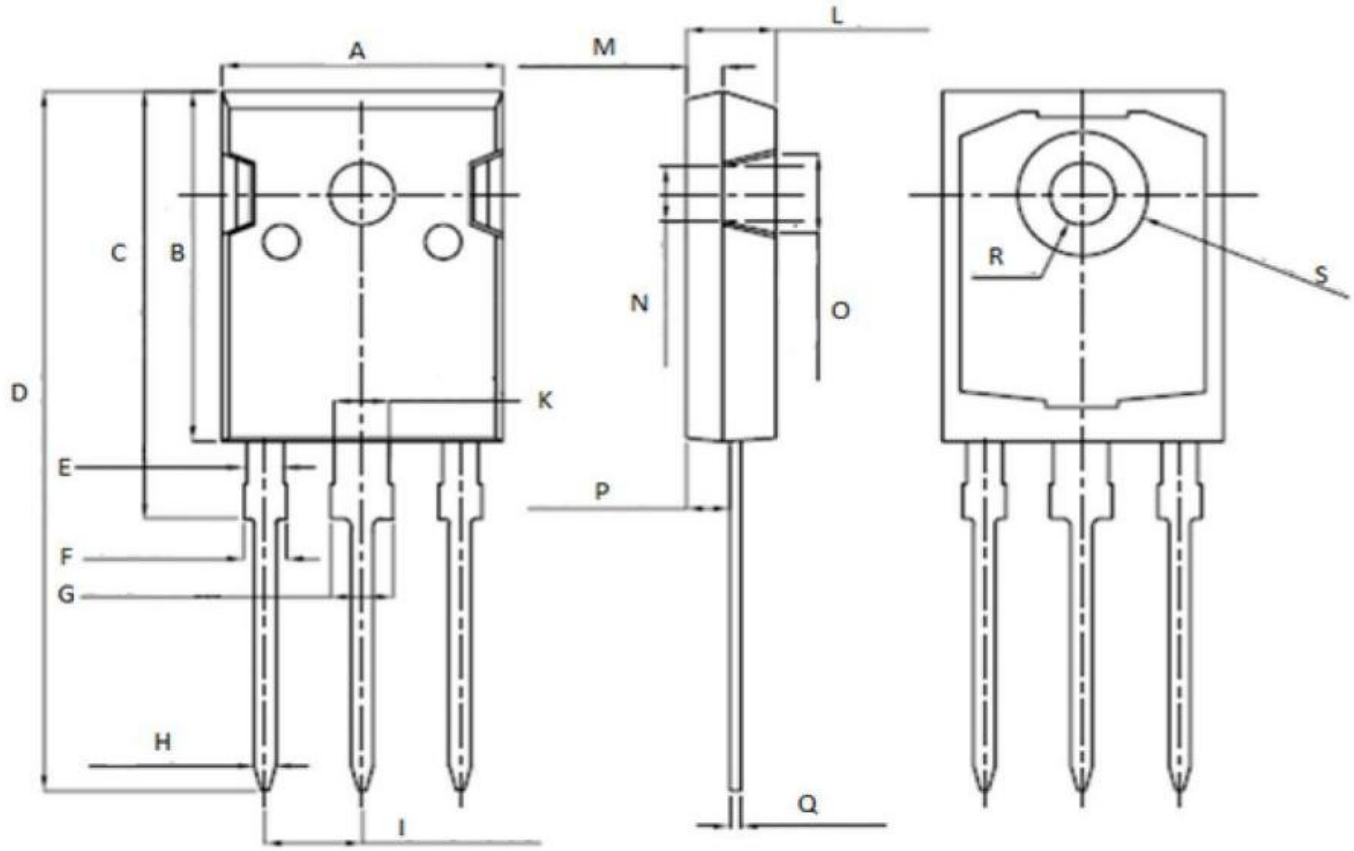


Fig 19. Peak diode recovery dv/dt test circuit & waveform

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



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

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