

● General Description

The AGM035N10H combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$.

This device is ideal for load switch and battery protection applications.

● Features

- Advance high cell density Trench technology
- Low $R_{DS(ON)}$ to minimize conductive loss
- Low Gate Charge for fast switching
- Low Thermal resistance

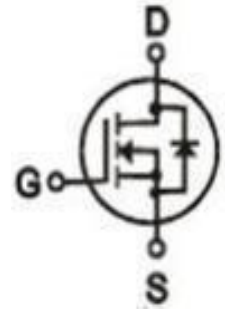
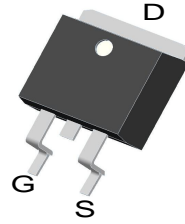
● Application

- MB/VGA Vcore
- SMPS 2nd Synchronous Rectifier
- POL application
- BLDC Motor driver

Product Summary

BVDSS	RDSON	ID
100V	3.5mΩ	150A

TO-263 Pin Configuration



Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM035N10H	AGM035N10H	TO-263	----	----	800

Table 1. Absolute Maximum Ratings (TA=25°C)

Symbol	Parameter	Value	Unit
VDS	Drain-Source Voltage (VGS=0V)	100	V
VGS	Gate-Source Voltage (VDS=0V)	±20	V
ID	Drain Current-Continuous(Tc=25°C) (Note 1)	150	A
	Drain Current-Continuous(Tc=100°C)	105	A
IDM (pluse)	Drain Current-Continuous@ Current-Pulsed (Note 2)	600	A
PD	Maximum Power Dissipation(Tc=25°C)	208	w
	Maximum Power Dissipation(Tc=100°C)	83	w
EAS	Avalanche energy (Note 3)	540	mJ
TJ,TSTG	Operating Junction and Storage Temperature Range	-55 To 150	°C

Table 2. Thermal Characteristic

Symbol	Parameter	Typ	Max	Unit
RθJA	Thermal Resistance Junction-ambient (Steady State) ¹	---	60	°C/W
RθJC	Thermal Resistance Junction-Case ¹	---	0.6	°C/W

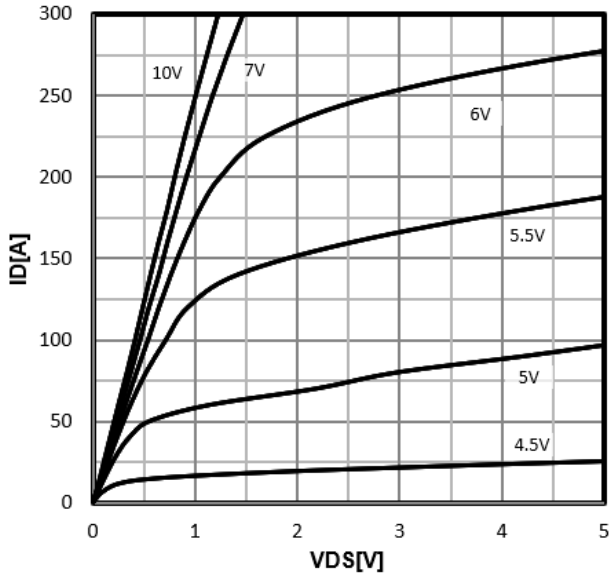
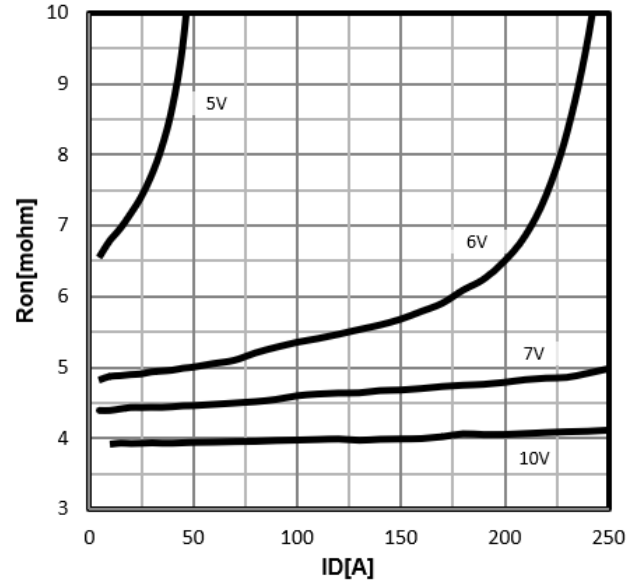
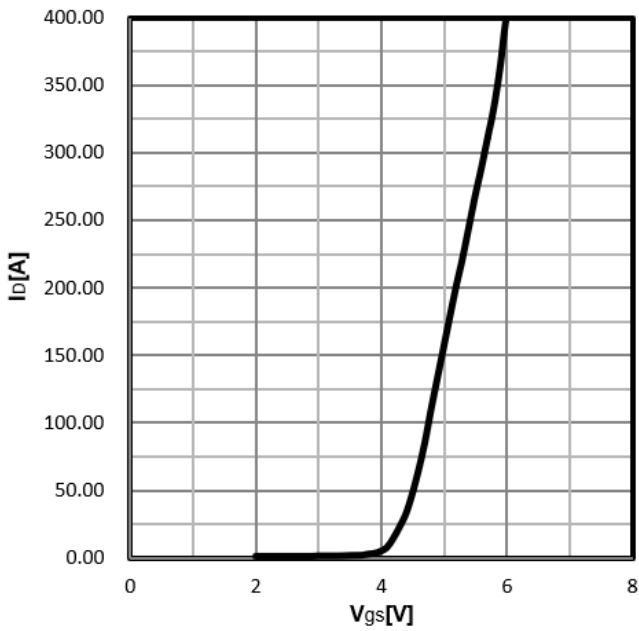
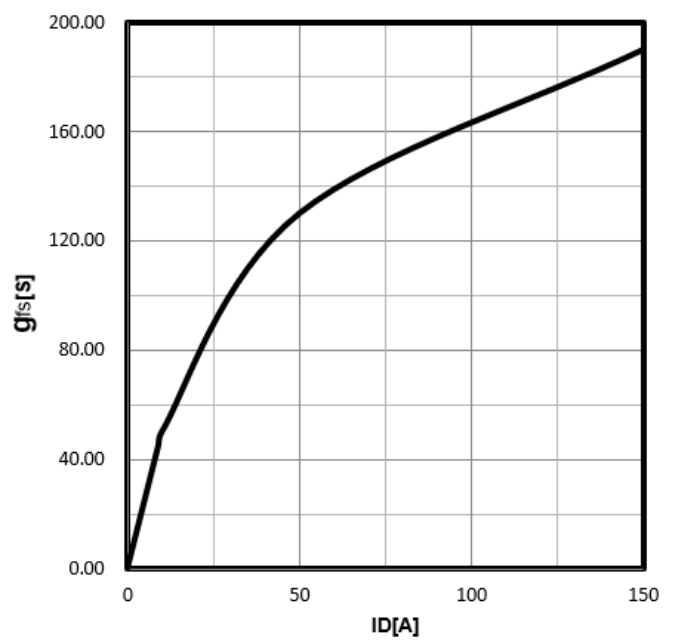
Table 3. Electrical Characteristics (TA=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V ID=250μA	100	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=100V,VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±20V,VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS,ID=250μA	2.5	3.0	3.5	V
gFS	Forward Transconductance	VDS=5V,ID=7A	--	130	--	S
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=75A	--	3.5	4.1	mΩ
		VGS=4.5V, ID=7A	--	--	--	mΩ
Dynamic Characteristics						
Ciss	Input Capacitance	VDS=50V, VGS=0V, F=1MHZ	--	3500	--	pF
Coss	Output Capacitance		--	1200	--	pF
Crss	Reverse Transfer Capacitance		--	27	--	pF
Rg	Gate resistance	VGS=0V, VDS=0V,f=1.0MHz	--	0.77	--	Ω
Switching Times						
td(on)	Turn-on Delay Time	VGS=10V,VDS=50V, ID=75A,RGEN=5Ω	--	25	--	nS
tr	Turn-on Rise Time		--	33	--	nS
td(off)	Turn-Off Delay Time		--	95	--	nS
tf	Turn-Off Fall Time		--	75	--	nS
Qg	Total Gate Charge	VGS=0-10V, VDS=50V, ID=75A	--	67.2	--	nC
Qgs	Gate-Source Charge		--	16.9	--	nC
Qgd	Gate-Drain Charge		--	16.9	--	nC
Source-Drain Diode Characteristics						
ISD	Source-Drain Current(Body Diode)		--	--	150	A
VSD	Forward on Voltage	VGS=0V,IS=75A	--	--	1.2	V
trr	Reverse Recovery Time	Is=20A ,VDD=50V dI/dt=500A/μs , TJ=25°C	--	82	--	ns
Qrr	Reverse Recovery Charge		--	180	--	nc

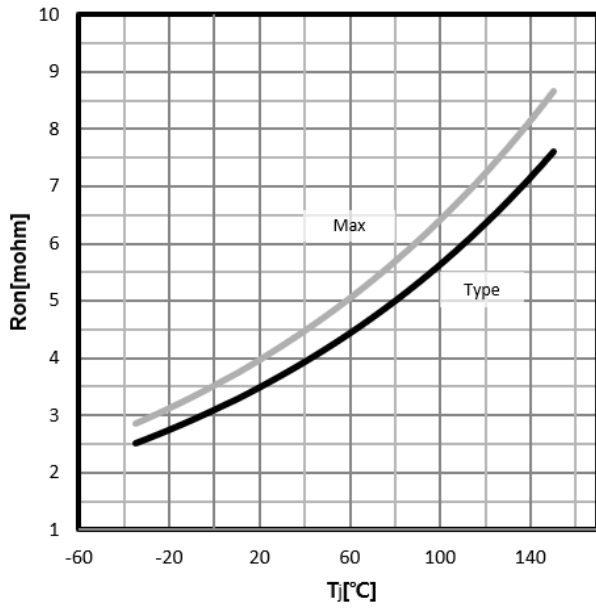
Notes 1.The maximum current rating is package limited.

Notes 2.Repetitive Rating: Pulse width limited by maximum junction temperature

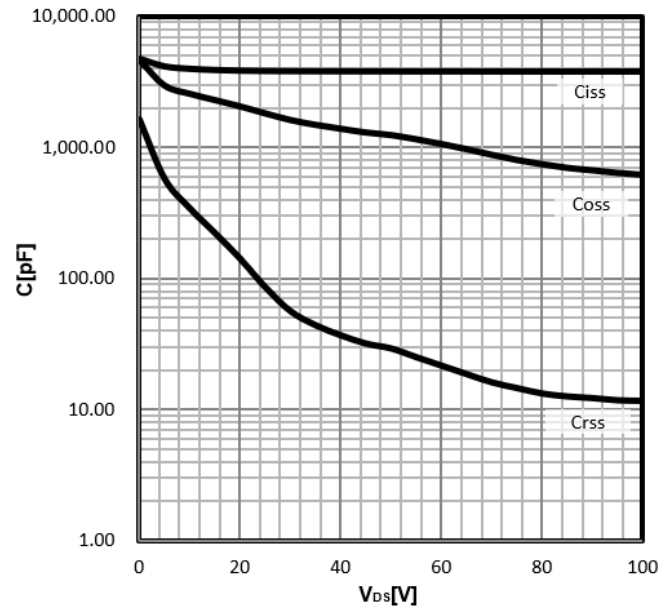
Notes 3.EAS condition: TJ=25°C

Characteristics Curve:
Typ. output characteristics
 $I_D = f(V_{DS})$

Typ. drain-source on resistance
 $R_{DS(on)} = f(I_D)$

Typ. transfer characteristics
 $I_D = f(V_{GS})$

Typ. forward transconductance
 $g_{fs} = f(I_D)$


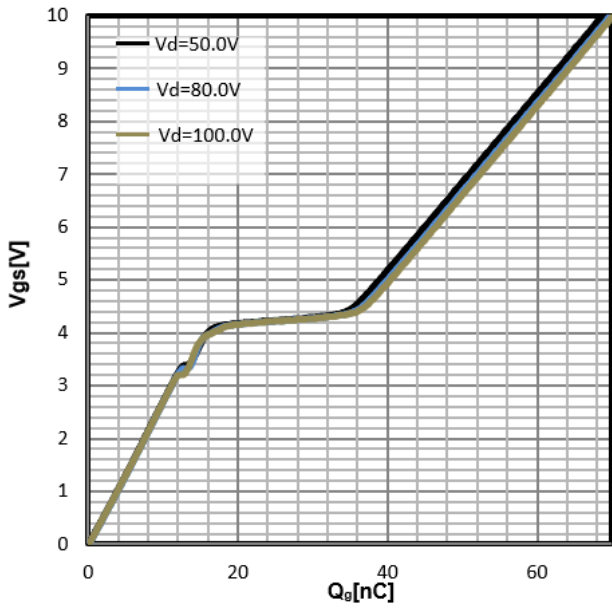
Drain-source on-state resistance
 $R_{DS(on)}=f(T_j)$; $I_D=75A$; $V_{GS}=10V$



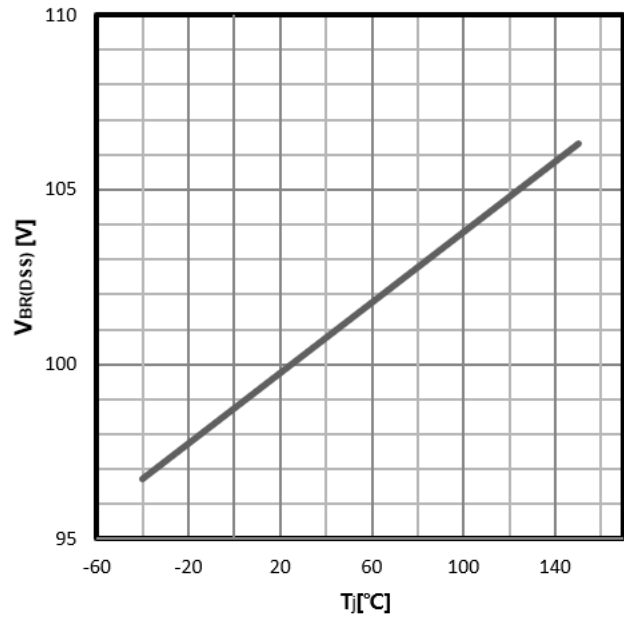
Typ. capacitances
 $C=f(V_{DS})$; $V_{GS}=0V$; $f=1MHz$



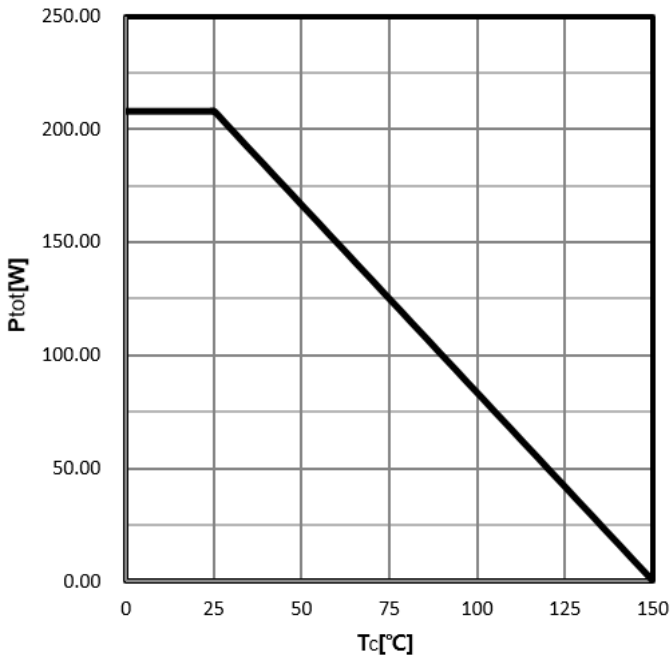
Typ. gate charge
 $V_{GS}=f(Q_{gate})$



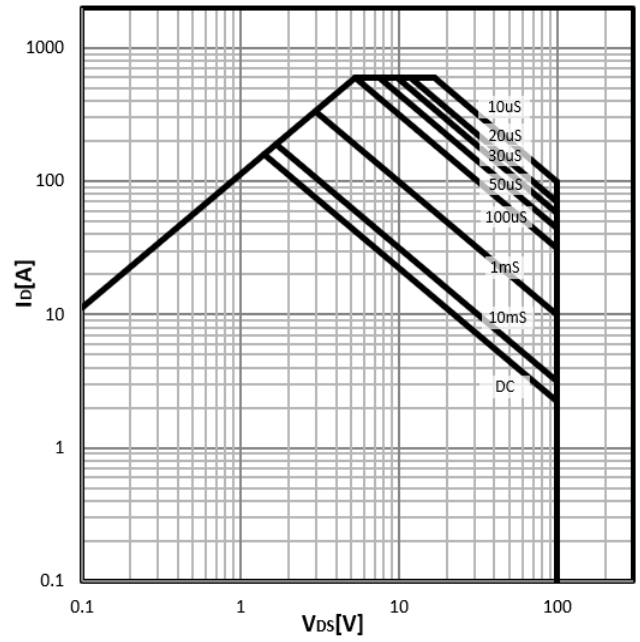
Drain-source breakdown voltage
 $V_{BR(DSS)}=f(T_j)$; $I_D=250\mu A$



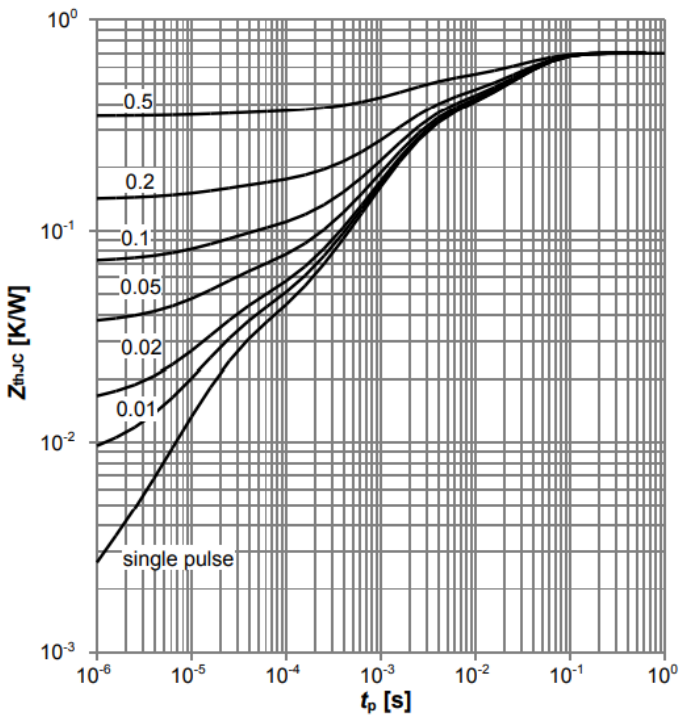
Power Dissipation
 $P_{tot}=f(T_j)$

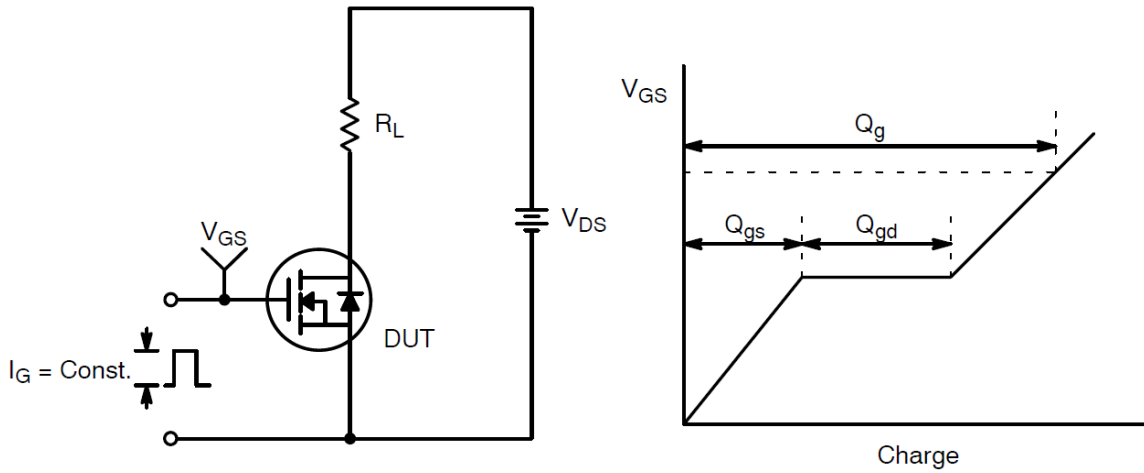
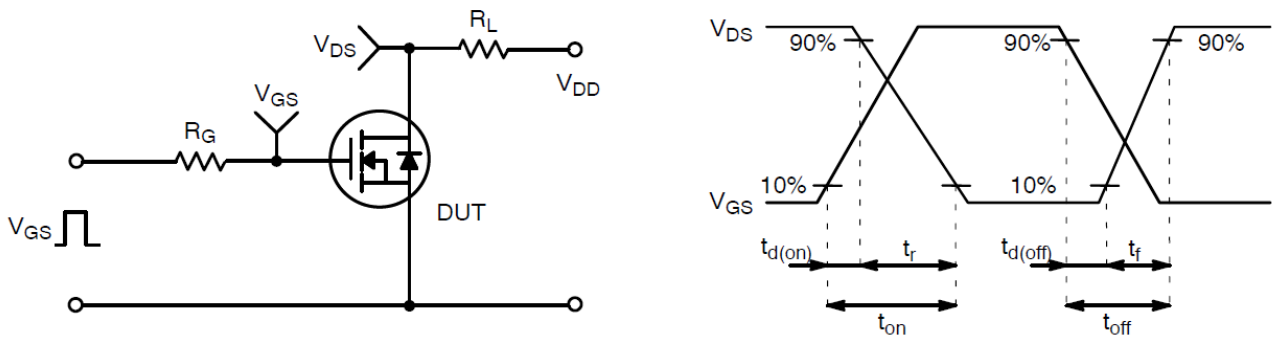
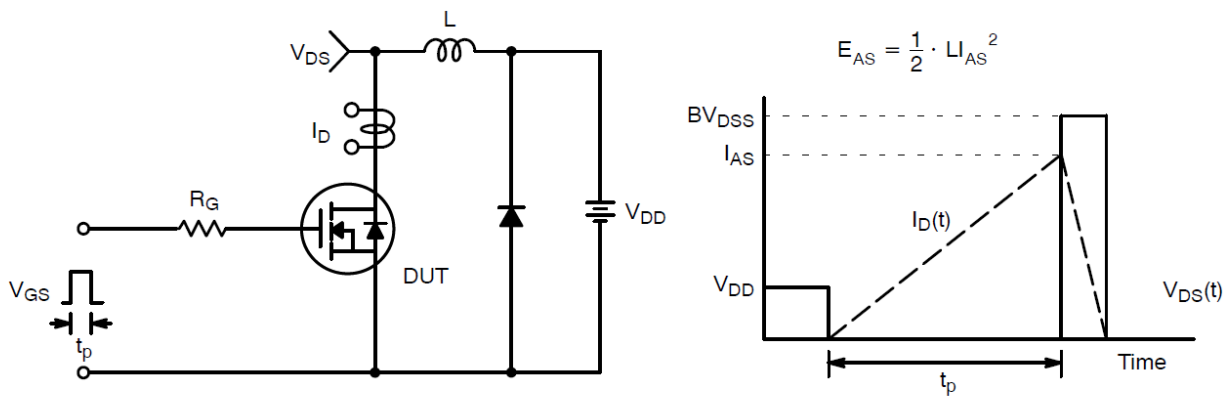


Safe operating area
 $I_D=f(V_{DS})$



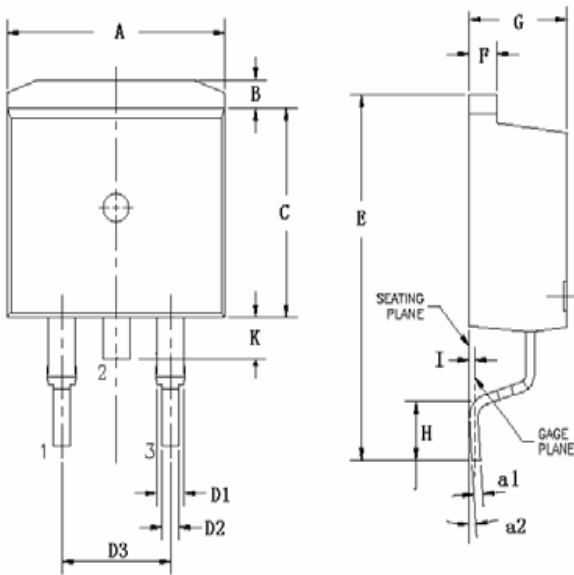
Max. transient thermal impedance
 $Z_{thJC}=f(t_p)$



Test Circuit and Waveform:

Gate Charge Test Circuit & Waveform

Resistive Switching Test Circuit & Waveforms

Unclamped Inductive Switching Test Circuit & Waveforms

TO-263 PACKAGE INFORMATION

Dimensions in mm unless otherwise specified



Symbol	Min	Nom	Max
A	9.66	9.97	10.28
B	1.02	1.17	1.32
C	8.59	9.00	9.40
D1	1.14	1.27	1.40
D2	0.70	0.83	0.95
D3		5.08	
E	15.09	15.24	15.39
F	1.15	1.28	1.40
G	4.30	4.50	4.70
H	2.29	2.54	2.79
I		0.25	
K	1.30	1.45	1.60
a1	0.45	0.55	0.65
a2(degree)	0°		8°


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