

General Description

The IRFS3306/IRFB3306 uses advanced trench technology to provide excellent RDS(ON).

This device is suitable for high current switching applications.

Features

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

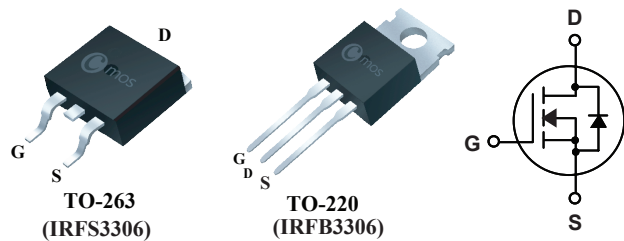
Product Summary

BVDSS	R _{DS(on)} max.	ID
60V	4.2mΩ	150A

Applications

- DC to DC convertors
- Synchronous Rectification
- Power Supply

TO-263/220 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	60	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	150	A
I _D @T _C =100°C	Continuous Drain Current	100	A
I _{DM}	Pulsed Drain Current	450	A
EAS	Single Pulse Avalanche Energy ¹	1512	mJ
P _D @T _C =25°C	Total Power Dissipation	230	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient	---	40	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	0.54	°C/W

Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	60	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =30A	---	3.3	4.2	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	2.0	---	4.0	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =60V, V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V, I _D =30A	---	31	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	1.2	---	Ω
Q _g	Total Gate Charge	I _D =75A	---	85	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} =30V	---	25	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =0V to 10V	---	28	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =30V	---	15	---	ns
T _r	Rise Time	V _{GS} =10V	---	77	---	
T _{d(off)}	Turn-Off Delay Time	R _G =2.7Ω	---	40	---	
T _f	Fall Time	I _D =75A	---	80	---	
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	4700	---	pF
C _{oss}	Output Capacitance		---	800	---	
C _{rss}	Reverse Transfer Capacitance		---	500	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V, Force Current	---	---	150	A
I _{SM}	Pulsed Source Current		---	---	450	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =30A, T _J =25°C	---	0.78	1.3	V

Note :

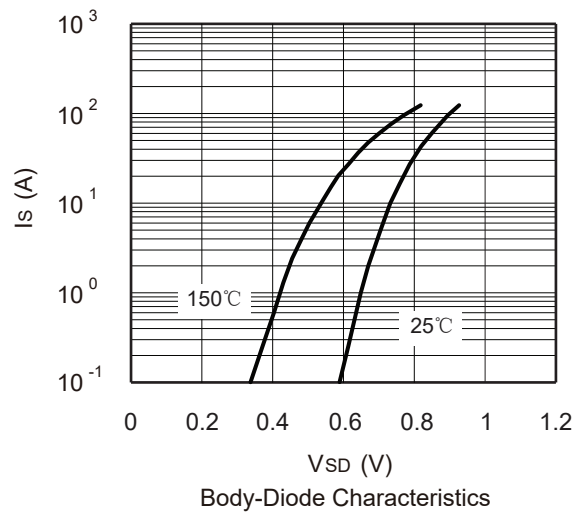
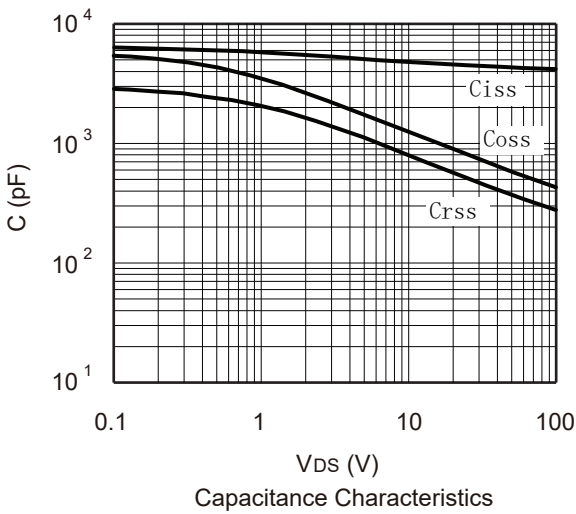
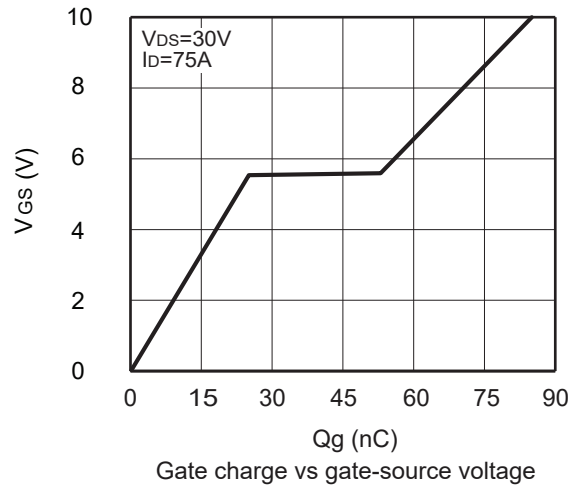
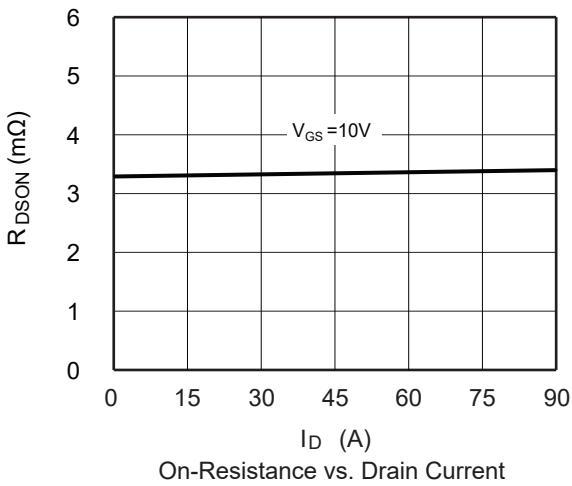
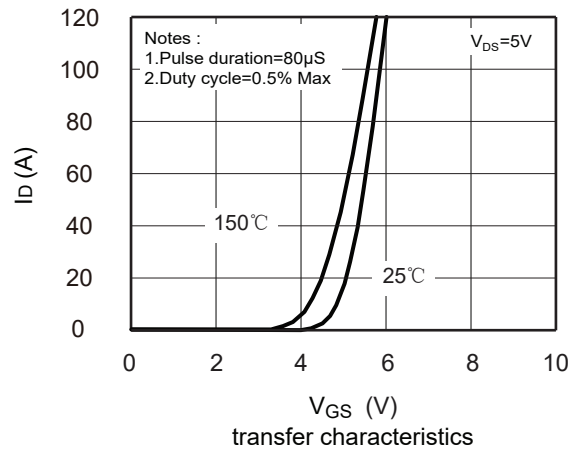
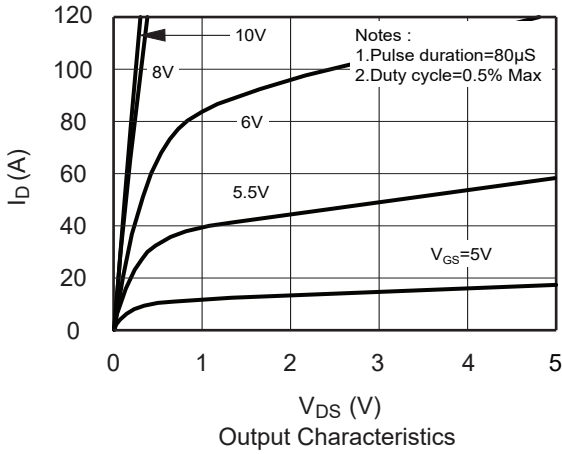
1.The EAS data shows Max. rating . The test condition is V_{DD}=40V, V_{GS}=10V, L=1mH, I_{AS}=55A.

This product has been designed and qualified for the consumer market.

Cmos assumes no liability for customers' product design or applications.

Cmos reserves the right to improve product design, functions and reliability without notice. Please refer to the latest version of specification.

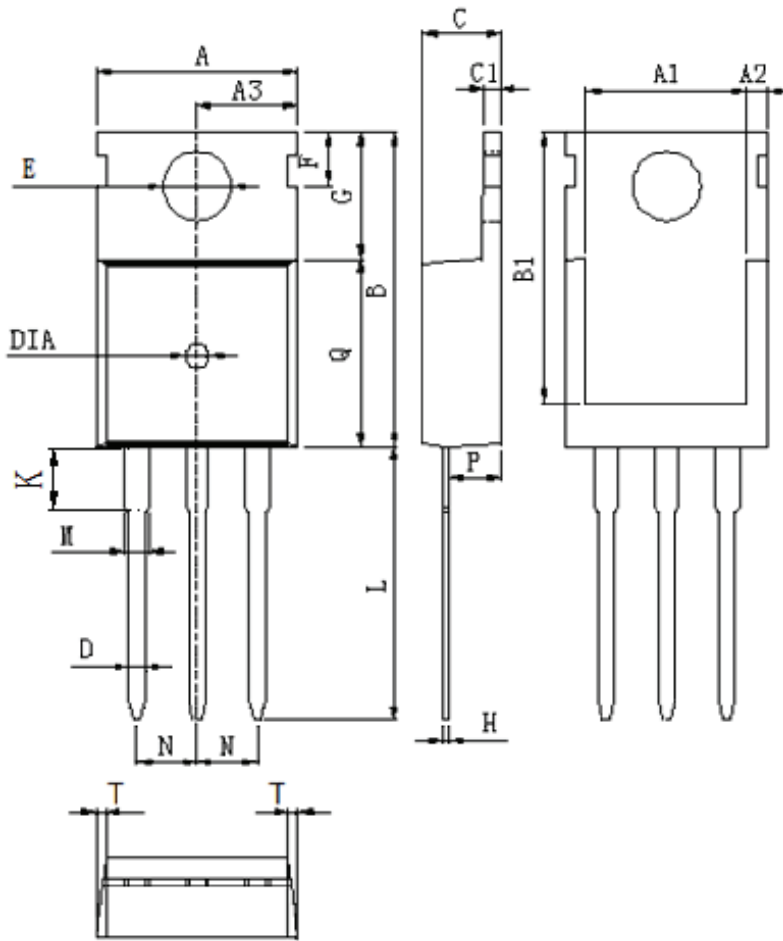
Typical Characteristics



Package Dimension

TO-220

Unit :mm

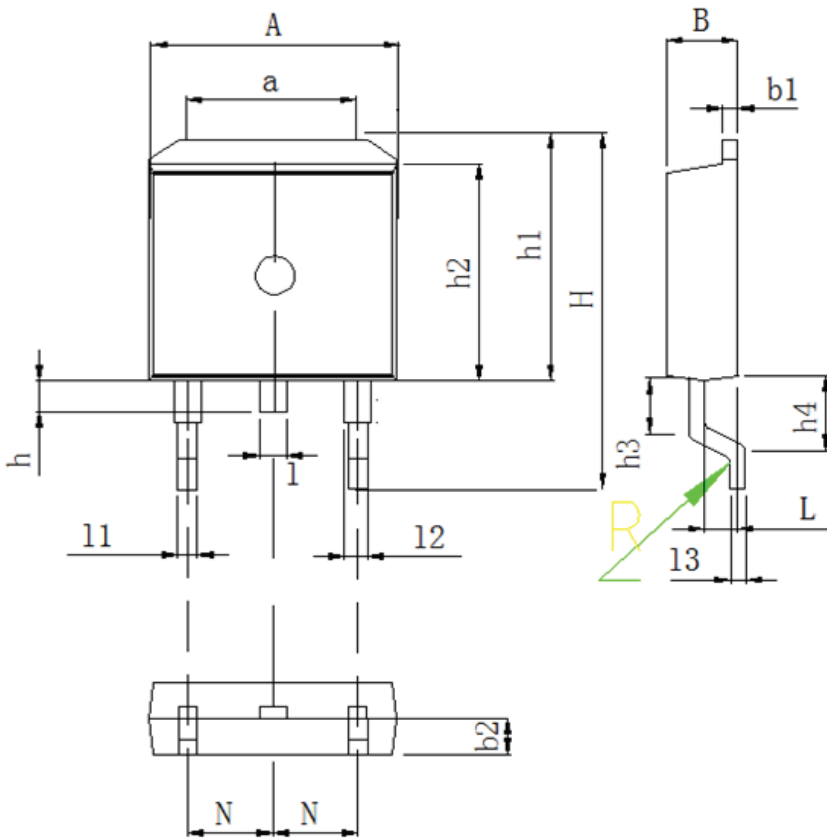


DIM	MILLIMETERS
A	10.0±0.3
A1	8.64±0.2
A2	1.15±0.1
A3	5.0±0.2
B	15.8±0.4
B1	13.2±0.3
C	4.56±0.1
C1	1.3±0.2
D	0.8±0.2
E	3.6±0.2
F	2.95±0.3
G	6.5±0.3
H	0.5±0.1
K	3.1±0.2
L	13.2±0.4
M	1.25±0.1
N	2.54±0.1
P	2.4±0.3
Q	9.0±0.3
T	W:0.35
DIA	⊙1.5 (deep 0.2)

Package Dimension

TO-263

Unit :mm



DIM	MILLIMETERS
A	9.8±0.2
a	7.4±0.4
B	4.5±0.2
b1	1.3±0.05
b2	2.4±0.2
H	15.5±0.3
h	1.54±0.2
h1	10.5±0.2
h2	9.2±0.1
h3	1.54±0.2
h4	2.7±0.2
L	2.4±0.2
1	1.3±0.1
11	0.8±0.1
12	1.3±0.1
13	0.5±0.1
N	2.54±0.1
R	0.5R±0.05