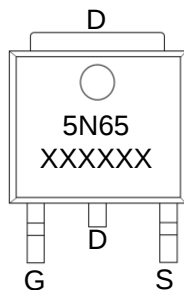


Features

- Low gate charge
- Low Ciss
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability

Application

- Power switching application

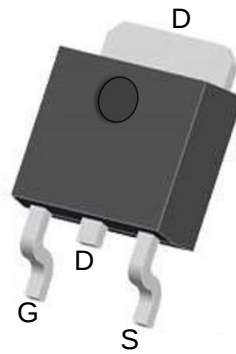


Marking and pin assignment

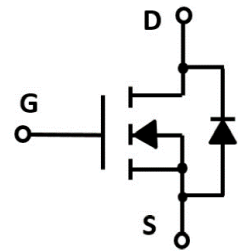
5N65 : Device code
XXXXXX : Code

650V/5A N-Channel MOSFET Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
650V	2.92Ω@10V	5A



TO-252 top view



Schematic diagram



Pb-Free



RoHS

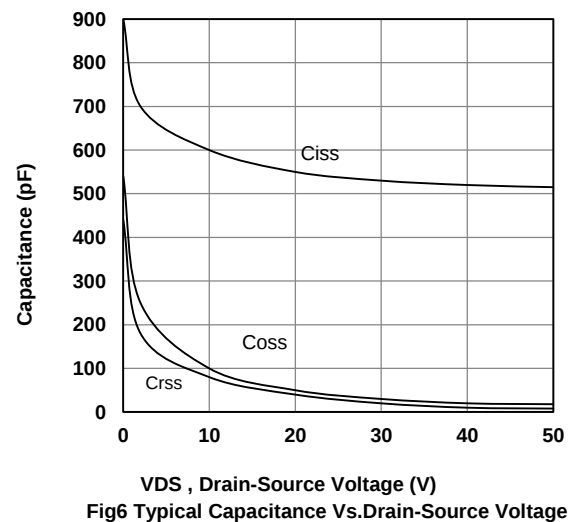
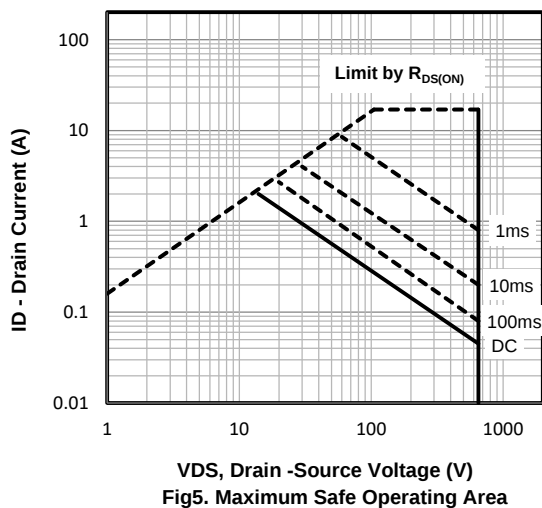
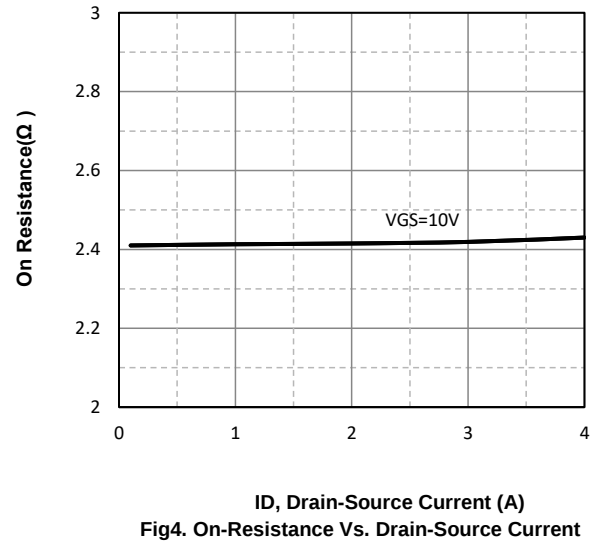
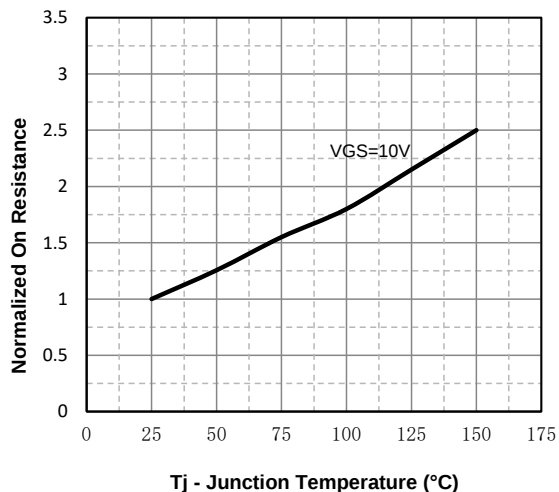
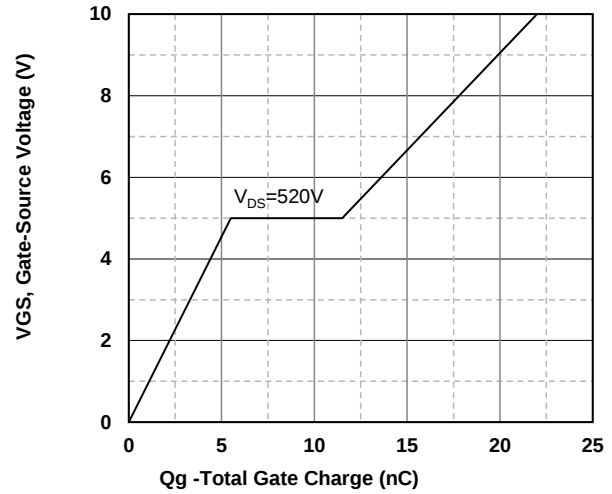
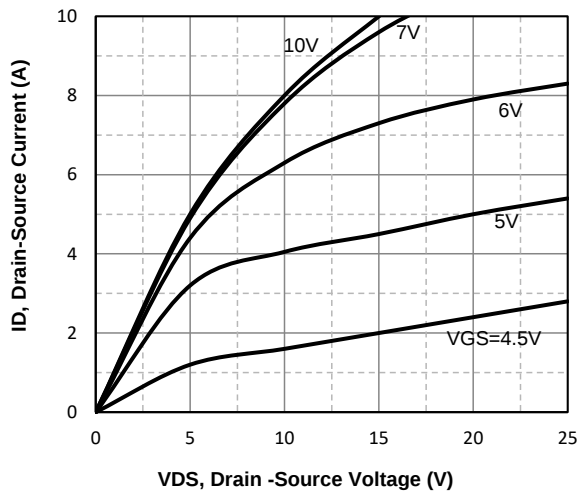


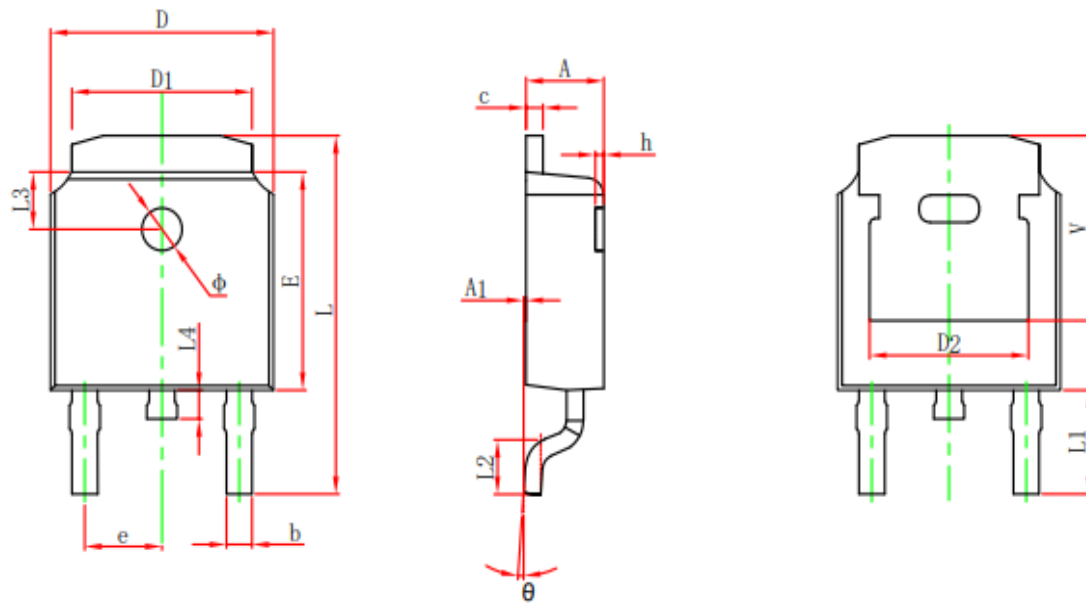
Halogen-Free

Absolute Maximum Ratings (TA=25 °C unless otherwise noted)				
Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		650	V
V _{GS}	Gate-Source Voltage		±30	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-50 to 155	°C
I _S	Diode Continuous Forward Current	Tc=25°C	5	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	16	A
I _D	Continuous Drain Current@GS=10V	Tc=25°C	5	A
P _D	Maximum Power Dissipation	Tc=25°C	40	W
E _{AS}	Single pulse avalanche energy		138	mJ

Electrical Characteristics (TJ=25°C unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	VGS=0V, ID=250μA	650	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=650V, VGS=0V	--	--	1	uA
IGSS	Gate-Body Leakage Current	VGS=±30V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	2	--	4	V
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=2A	--	2.4	2.92	Ω
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=25V, VGS=0V, f=1MHz	--	584	--	pF
COSS	Output Capacitance		--	37	--	pF
CRSS	Reverse Transfer Capacitance		--	27	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=520V, ID=5A, VGS=10V	--	13	--	nC
Qgs	Gate Source Charge		--	5.5	--	nC
Qgd	Gate Drain Charge		--	2.5	--	nC
td(on)	Turn-on Delay Time	VDD=325V, ID=3A, VGS=10V, RG=10Ω	--	10.5	--	nS
tr	Turn-on Rise Time		--	1.2	--	nS
td(off)	Turn-Off Delay Time		--	21.5	--	nS
tf	Turn-Off Fall Time		--	4	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25°C, Is=2A,	--	--	1.2	V

Typical Operating Characteristics



TO-252 Package information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	