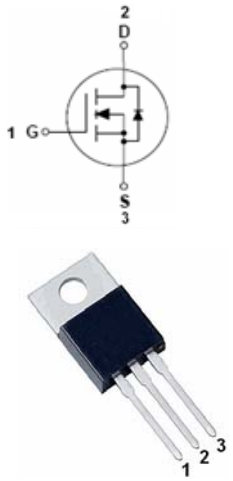
5A,650V N-Channel Power Mosfet 5N65

FEATURES

- $R_{DS(ON)}$ =2.4Ω@ V_{GS} = 10V
- Ultra low gate charge (typical 15 nC)
- Low reverse transfer Capacitance (CRSS = typical 6.5 pF)
- Fast switching capability
- Avalanche energy specified
- Improved dv/dt capability, high ruggedness

Lead-free



TO-220AB

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source voltage	650	V
V_{GSS}	Gate -Source voltage	±30	V
I_D	Continuous Drain Current	5.0	A
I_{DM}	Pulsed Drain Current	20	A
E_{AS} E_{AR}	Avalanche Energy Single Pulsed Repetitive	210 10	mJ
dv/dt	Peak Diode Recovery dv/dt	4.5	V/ns
P_D	Power Dissipation	75	W
$R_{\theta JA}$	Thermal resistance,Junction-to-Ambient	62.5	℃/W
T_J	Junction Temperature	+150	℃
T_{OPR}, Tstg	Operating and Storage Temperature	-55 to +150	℃

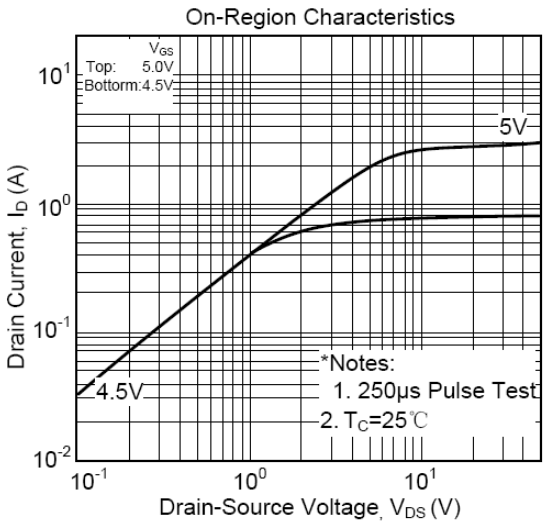
5A,650V N-Channel Power Mosfet 5N65

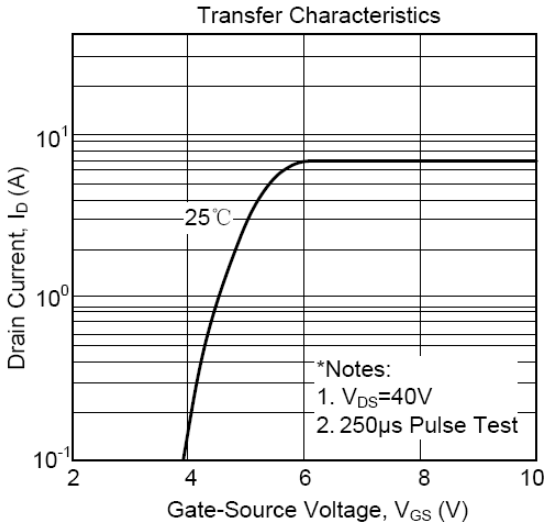
ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

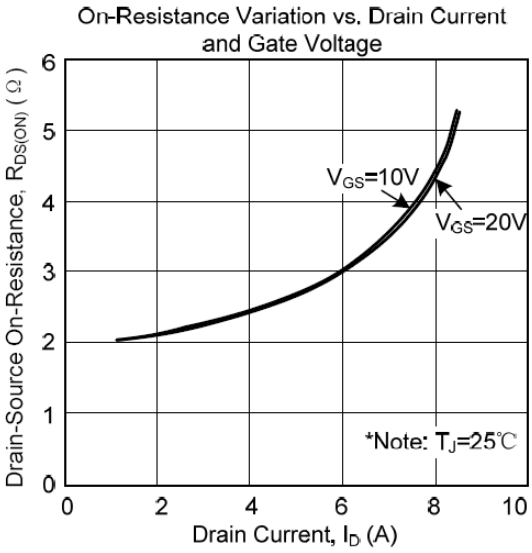
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=250μA	650	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=650V, V_{GS}=0V	-	-	1	μA
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±30V	-	-	±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.0	-	4.0	V
Static drain-Source on-resistance	$R_{DS(ON)}$	V_{GS}=10V,I_D=2.5A	-	2.0	2.4	Ω
DYNAMIC CHARACTERISTICS						
Input capacitance	C_{ISS}	V_{DS}=25V,V_{GS}=0V,f=1.0MHz	-	515	670	pF
Output capacitance	C_{OSS}		-	55	72	
Reverse transfer capacitance	C_{RSS}		-	6.5	8.5	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{D(ON)}$	V_{DD} = 325V, I_D = 5.0A, R_G= 25Ω	-	10	30	ns
Rise Time	tr		-	42	90	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	38	85	ns
Fall Time	tf		-	46	100	ns
Total Gate Charge	Qg	V_{DS} = 520V I_D= 5.0A V_{GS}= 10V,	-	15	19	nC
Gate-Source Charge	Qgs		-	2.5	-	nC
Gate-Drain Charge	Qgd		-	6.6	-	nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source diode forward voltage	V_{SD}	V_{GS}=0V,I_s=5.0A	-	-	1.4	V
Maximum Continuous Drain-Source Diode Forward Current	I_S		-	-	5	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}		-	-	20	A
Body Diode Reverse Recovery Time	trr	V_{GS}=0V ,Is=5.0A, dI/dt=100A/μs	-	300	-	nS
Body Diode Reverse Recovery Charge	Qrr		-	2.2	-	uC

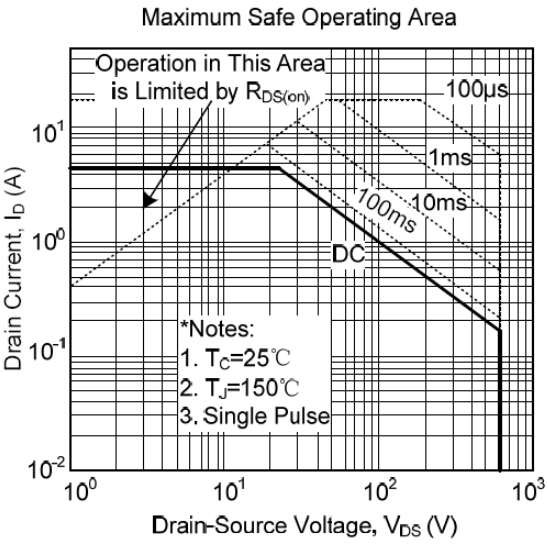
5A,650V N-Channel Power Mosfet 5N65

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified





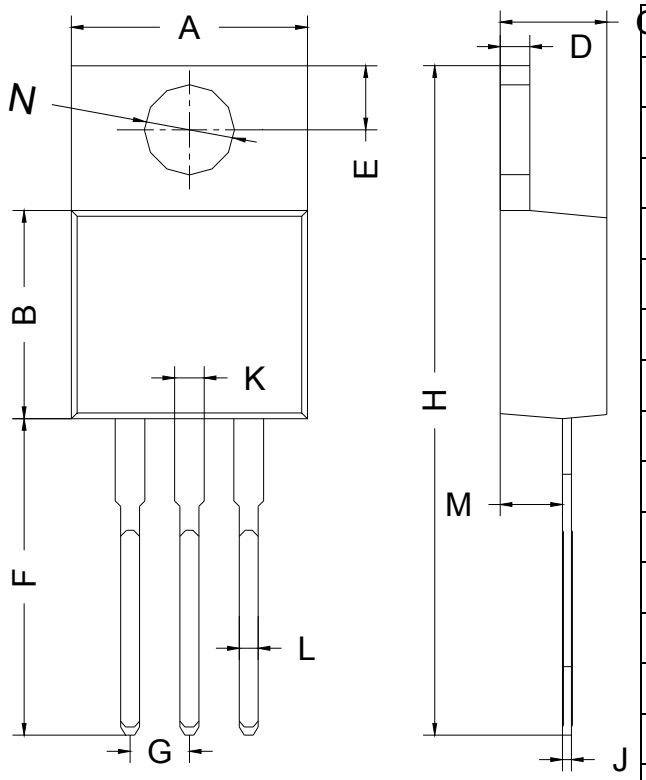




5A,650V N-Channel Power Mosfet 5N65

PACKAGE OUTLINE

Plastic surface mounted package TO-220AB



TO-220AB		
Dim	Min	Max
A	9.80	10.30
B	8.70	9.10
C	4.57 Typical	
D	1.27 Typical	
E	2.64	2.84
F	13.14	13.74
G	2.44	2.64
H	28.03	28.83
J	0.38 Typical	
K	1.22	1.32
L	0.71	0.91
M	2.50 Typical	
N	3.86 Typical	
All Dimensions in mm		