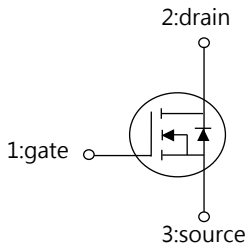
■ PRODUCT CHARACTERISTICS

V_{DS}	200V
$R_{DS(on)}$Typ(@V_{GS}=10V)	110mΩ
I_D	18A

Symbol



■ APPLICATIONS
Power factor correction
Switched mode power supplies
Uninterruptible power supply

■ FEATURES
Uitra low $R_{DS(on)}$
100% uis tested
RoHS compliant

TO-220

TO-220F

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT18N20F	TO-220F	50pieces/Tube
N/A	MOT18N20A	TO-220	50pieces/Tube

■ ABSOLUTE MAXIMUM RATINGS(Tc=25℃,unless otherwise specified)

Parameter		Symbol	Value	Unit
Drain-source voltage		V_{DSS}	200	V
Continuous drain current		I_D	18	A
Continuous drain current (Tc=100℃)			11	A
Pulsed drain current		I_{DM}	72	A
Gate source voltage		V_{GS}	±30	V
Single pulse avalanche energy		E_{AS}	580	mJ
Peak diode recovery dv/dt V/ns		dv/dt	5	V/ns
Power dissipation	TO-220	P_D	130	W
	Derating factor above 25℃		1.2	℃/W
	TO-220F		42	W
	Derating factor above 25℃		0.33	℃/W
Operating junction and storage temperature range		T_J ,T_{STG}	-55 to 150	℃

■ ELECTRICAL CHARACTERISTICS(Tc=25 ℃,unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS}=0V,I_{DS}=250μA	200	-	-	V
Drain-source leakage current	I_{DSS}	V_{DS}=200V $_{GS}$=0V	-	-	1	μA
Gate-source leakage current	I_{GSS}	V_{GS}=±30V,V_{DS}=0V	-	-	±100	nA
On characteristics						
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	2	-	4	V
On-state characteristics	$R_{DS(ON)}$	V_{GS}=10V,I_D=7.5A	-	0.12	0.18	Ω
Foeward transconductance	gfs	V_{GS}=30V,I_D=9A	5	-	-	S
Dynamic characteristics						
Input capacitance	Ciss	V_{GS}=0V,V_{DD}=25V f=1MHz	-	1320	-	pF
Out capacitance	Coss		-	450	-	pF
Reverse transfer capacitance	Crss		-	130	-	pF
Gate resistance	Rg	f=1MHz	-	2	-	Ω
Switching characteristics						
Turn-on delay time	td(on)	V_{GS}=10V,V_{DD}=100V I_D=18A, R_G=20Ω	-	15	-	nS
Turn-on rise time	tr		-	52	-	nS
Turn-off delay time	td(off)		-	46	-	nS
Turn-off fall time	tf		-	37	-	nS
Total gate charge	Qg	V_{GS}=10V,V_{DD}=160V I_D=18A	-	23	-	nC
Gate-source charge	Qgs		-	8	-	nC
Gate-drain charge	Qgd		-	6	-	nC
Source-drain diode ratings and characteristics						
Continuous source current	I_S		-	-	18	A
Maximum pulsed current	I_{SM}		-	-	72	A
Diode forward voltage	V_{SD}	V_{GS}=0V,I_S=18A	-	-	1.2	V
Reverse recovery time	Trr	V_{GS}=0V,I_S=18A dIF/dt=100A/us	-	350	-	nS
Reverse recovery charge	Qrr		-	3600	-	nC

■ TYPICAL CHARACTERISTICS

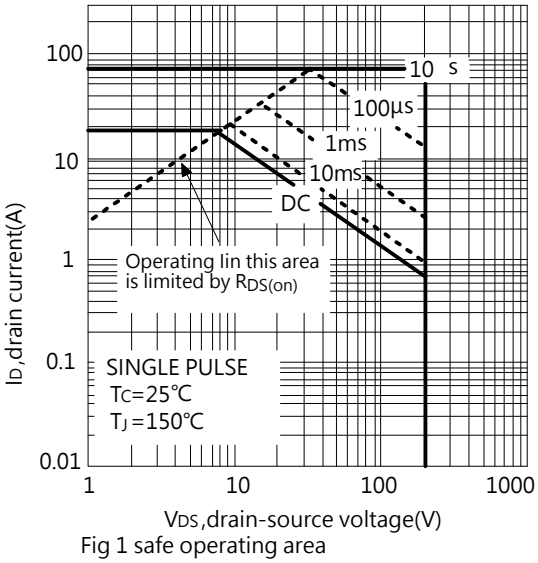


Fig 1 safe operating area

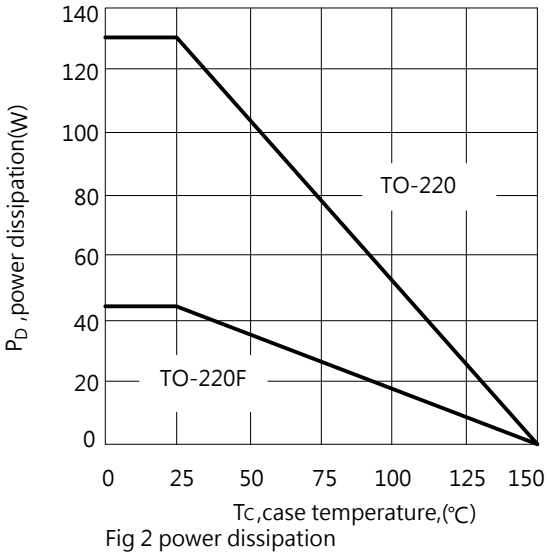


Fig 2 power dissipation

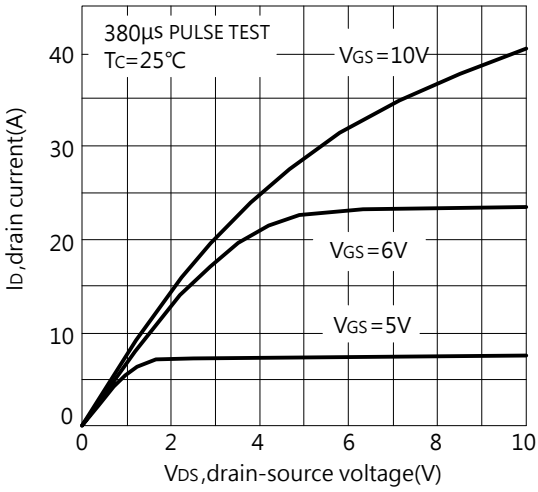


Fig 3 typical output characteristics

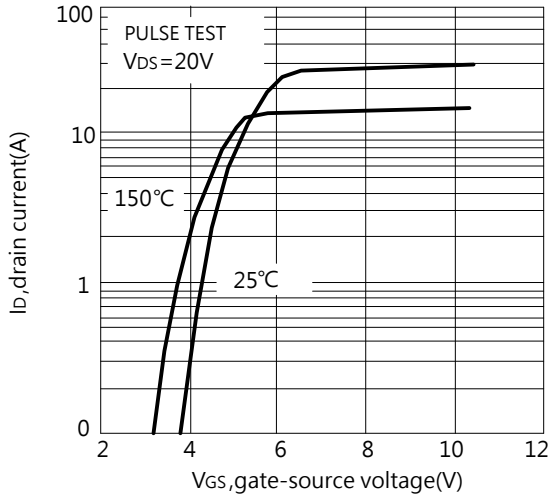


Fig 4 typical transfer characteristics

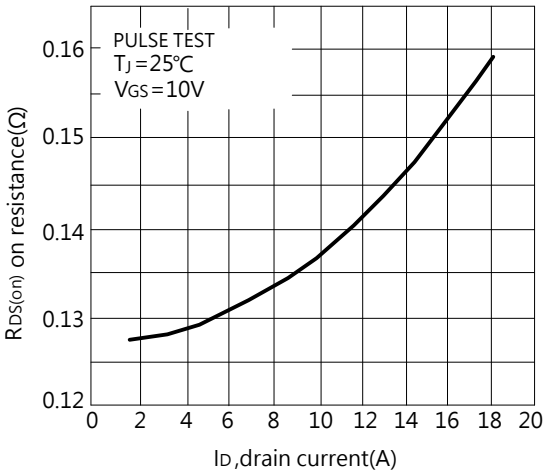


Fig 5 typical drain to source on resistance vs drain current

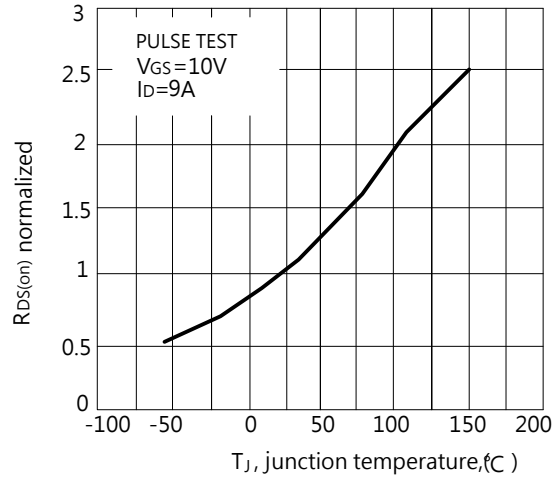


Fig 6 typical breakdown voltage vs junction temperature

■ TYPICAL CHARACTERISTICS(Cont.)

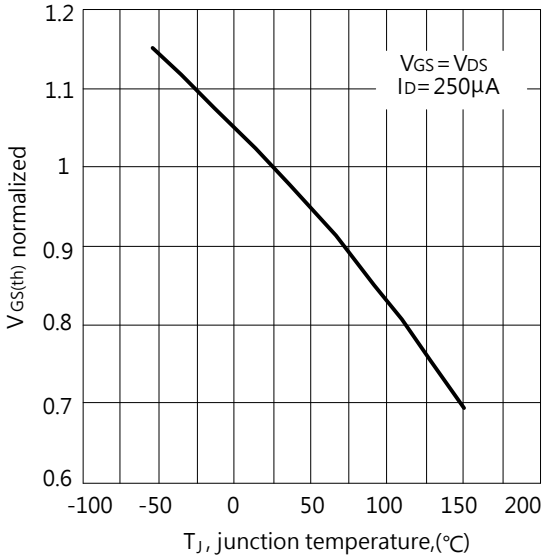


Fig 7 typical theshold voltage vs junction temperature

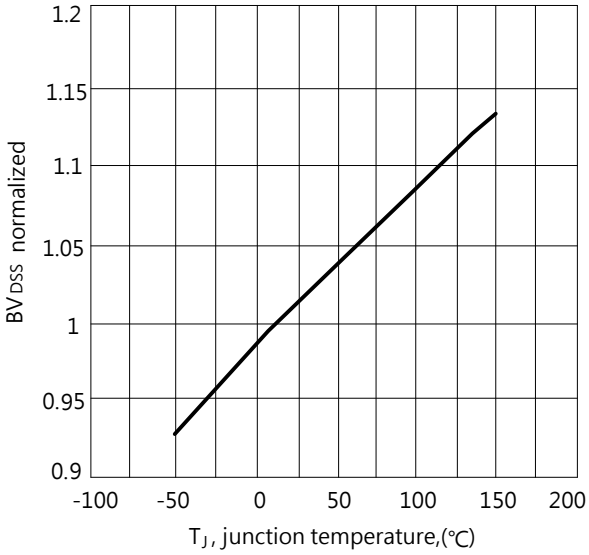


Fig 8 typical breakdown voltage vs junction temperature

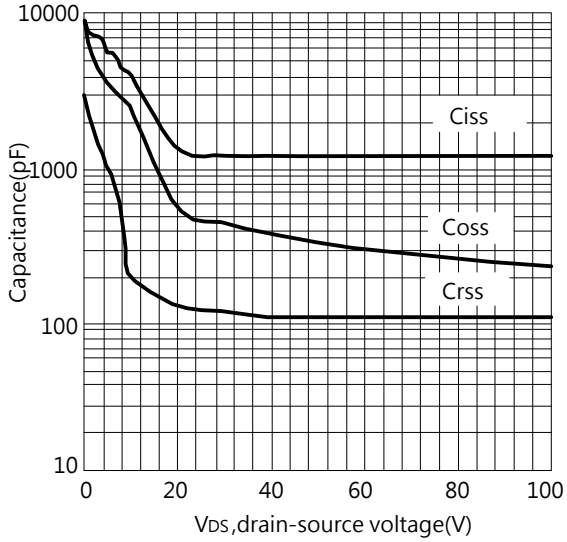


Fig 9 capacitance characteristics

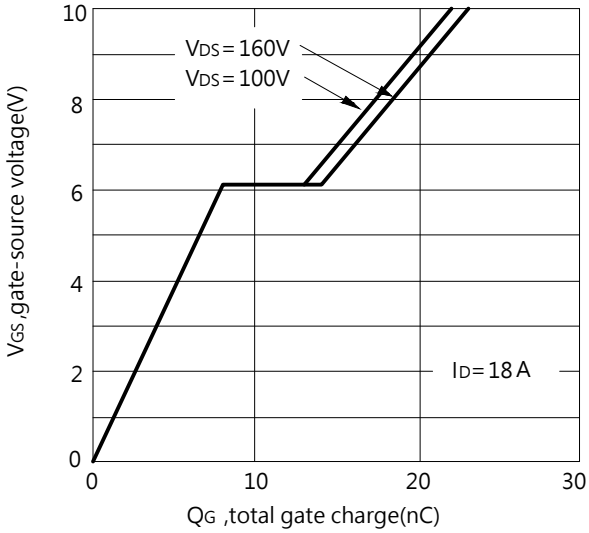
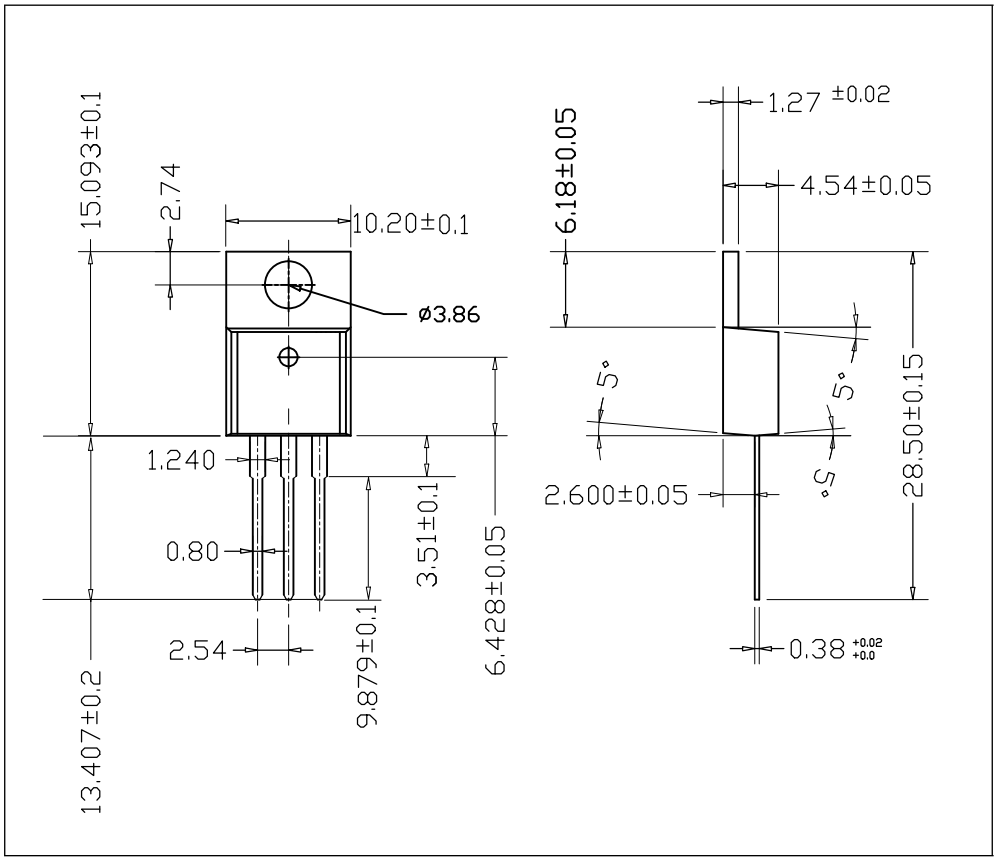


Fig 10 gate charge characteristics

■ TO-220-3L PACKAGE OUTLINE DIMENSIONS



■ TO-220F-3L PACKAGE OUTLINE DIMENSIONS