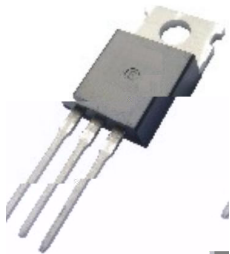
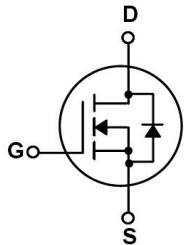


Rev. F Jul.-2018

TO-220      N      MOS      N-CHANNEL MOSFET in a TO-220 Plastic Package.

Low thermal resistance, fast switching.

For Electronic transformer, Switch mode power supply.



PIN1 G

PIN 2 D

PIN 3 S

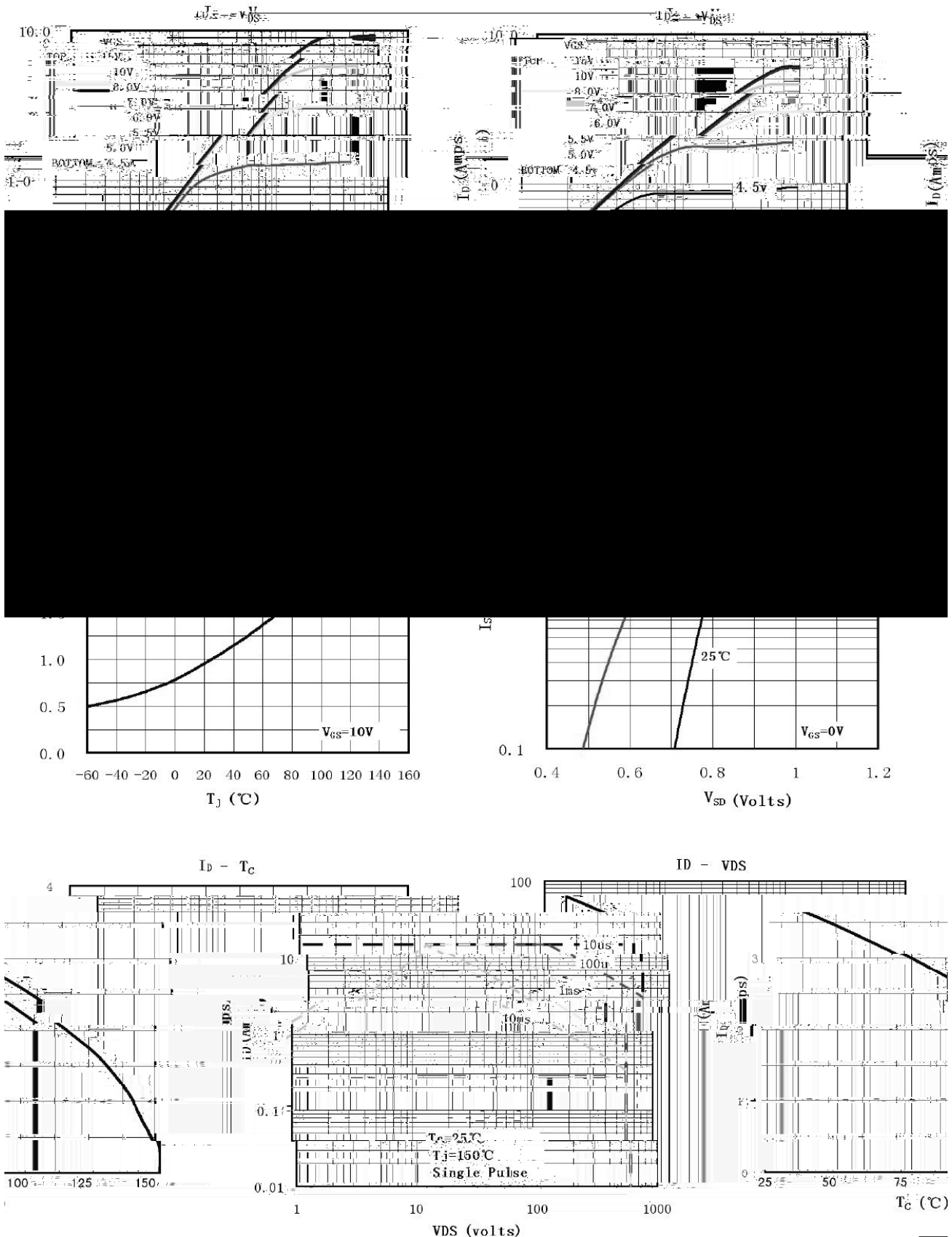
See Marking Instructions.

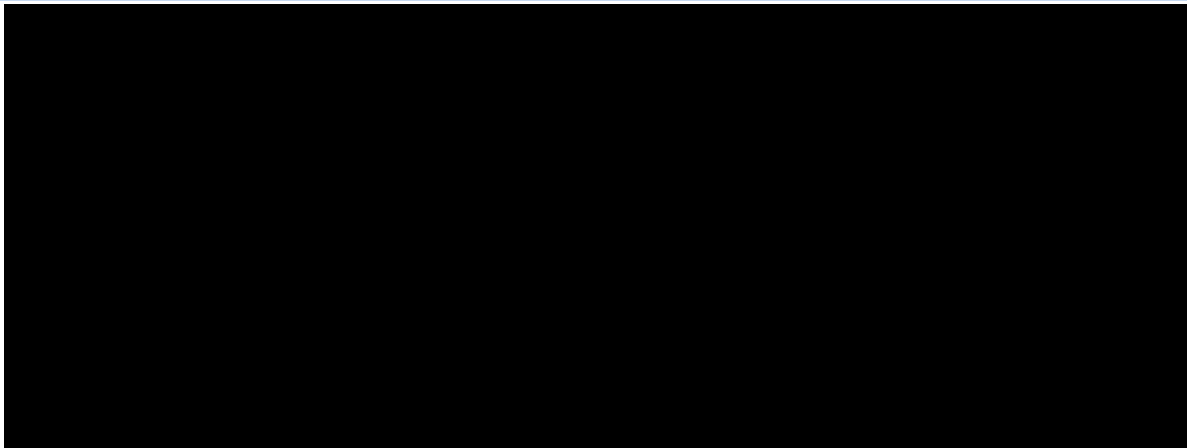
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	700	V
Gate-Source Voltage	$V_{GS}$	$\pm 30$	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	4.0	A
Drain Current	$I_D(T_c=100^\circ\text{C})$	2.5	A
Drain Current - Pulsed	$I_{DM}^{(1)}$	16	A
Single Pulsed Avalanche Energy	$E_{AS}^{(2)}$	260	mJ
Power Dissipation	$P_{tot}$	106	W
Junction Temperature Range	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ\text{C}$
Thermal Resistance Junction-case	$R_{-JC}$	1.18	$^\circ\text{C/W}$
Thermal Resistance Junction-ambient	$R_{-JA}$	62.5	$^\circ\text{C/W}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V$ $I_D=250\mu A$	700			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=700V$ $V_{GS}=0V$ $T_j=25^\circ\text{C}$			1	$\mu A$
		$V_{DS}=560V$ $V_{GS}=0V$ $T_j=125^\circ\text{C}$			10	$\mu A$
Gate-Body Leakage Current, Forward	$I_{GSS}$	$V_{GS}=\pm 30V$			$\pm 100$	nA
Continuous Diode Forward Current	$I_S$				4.0	A
Drain-Source Diode Forward Voltage	$V_{SD}$	$I_S=4.0A$ $V_{GS}=0V^{(3)}$ $T_j=25^\circ\text{C}$			1.4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=2.0A^{(3)}$			2.8	
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS}=V_{DS}$ $I_D=250\mu A$	2.0		4.0	V
Reverse Recovery Time	$t_{rr}$	$I_f=4.0A$ $T_j=25^\circ\text{C}$		250		nS
Reverse Recovery Charge	$Q_{rr}$	$di/dt=100A/\mu s^{(3)}$		1.5		$\mu C$
Input Capacitance	$C_{iss}$	$V_{GS}=0V$ $V_{DS}=25V$ $V_F=1.0MHZ$		520		pF
Turn-Off Delay Time	$t_{d(off)}$	$V_{DD}=350V$ $I_D=4.0A$ $R_G=25^{(3)}$		25		ns
Forward Transconductance	$g_{fs}$	$V_{DS}=40V$ $I_D=2.0A^{(3)}$		4.0		S
Total Gate Charge	$Q_g$	$I_D=4.0A$ $V_{DS}=560V$ $V_{GS}=10V^{(3)}$		17.4		nC
Gate-to-Source Charge	$Q_{gs}$			4.8		nC
Gate-to-Drain Charge	$Q_{gd}$			5.4		nC

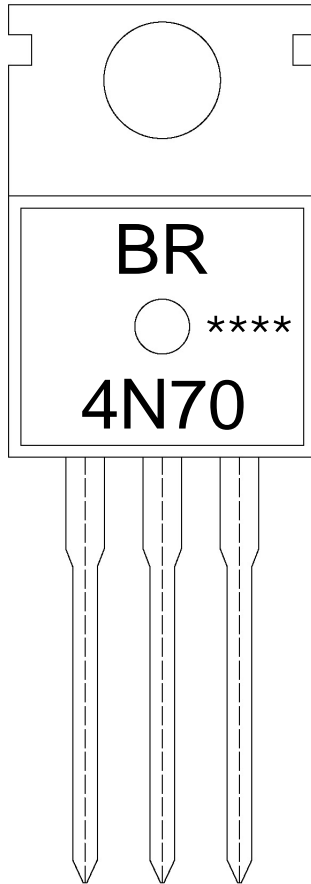
(Notes):

- ① : / Repetitive rating: Pulse width limited by maximum junction temperature  
 ② : =  $25^\circ\text{C}$ ,  $V_{DD}=50V$ ,  $L=30mH$ ,  $R_G=25$ ,  $I_{AS}=4.0A$  / Starting  $T_j=25^\circ\text{C}$ ,  $V_{DD}=50V$ ,  $L=30mH$ ,  $R_G=25$ ,  $I_{AS}=4.0A$   
 ③ : 300 $\mu s$  2 / Pulse Test: Pulse width 300 $\mu s$ , Duty cycle 2%





Symbol		Dimensions In Millimeters		Symbol		Dimensions In Millimeters	
Max		Min	Max	Max	Min	Max	Min
1.4	Δ	9.8	10.2	C	1.2		
0.7		3.56	3.66	P	6.3	6.5	
9.4		15.7	16.1	B1	9.0		
2.6		b	12.6	C1	2.2		
0.9		b1	9.6	a1	0.7		
0.6				a	1.32		
1.02		1.3	1.4	E	2.34	2.74	
				0.2	±0.25	1.45	



BR

4N 70

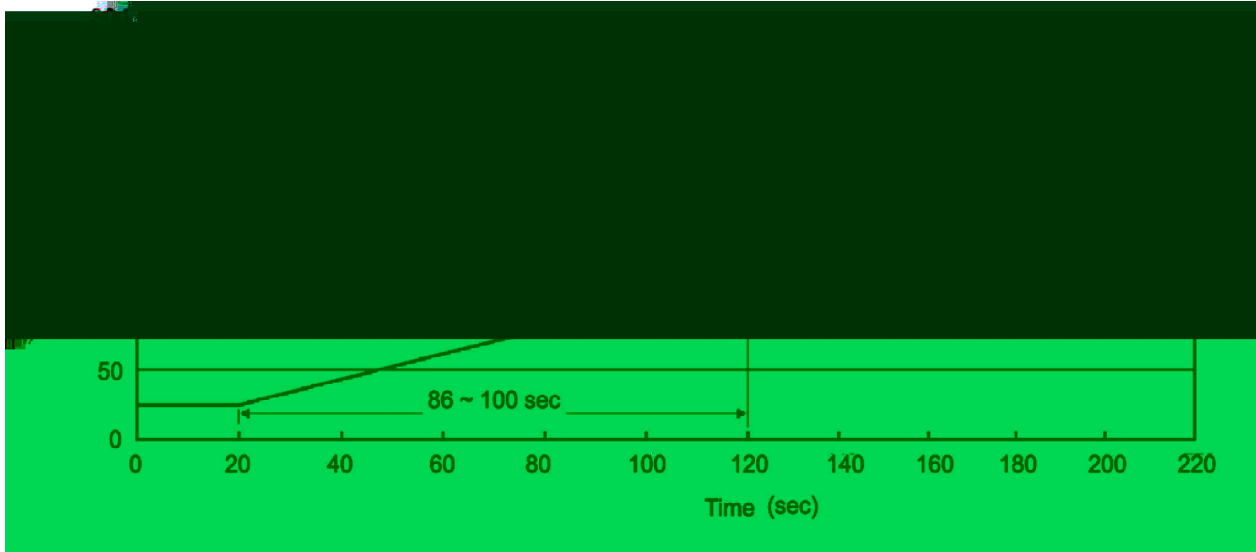
\*\*\*\*

Note:

BR: Company Code

4N 70: Product Type.

\*\*\*\*: Lot No. Code, code change with Lot No.


**Note:**

- |   |        |           |   |
|---|--------|-----------|---|
| 1 | 25 150 | 60 90sec; | 1.Preheating:25~150 , Time:60~90sec.    |
| 2 | 255±5  | 5±0.5sec; | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |
| 3 | 2 10   | /sec.     | 3. Cooling Speed: 2~10 /sec.            |

270±5

10±1 sec.

Temp.:270±5℃

Time:10±1 sec

/ BULK

Package Type	Units					Dimension (unit mm <sup>3</sup> )		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type	Units					Dimension (unit mm <sup>3</sup> )		
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Tube	Inner Box	Outer Box
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180