## "Yـ / Descriptions

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

## ◕ È / Features

, , ,

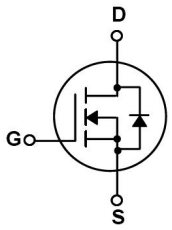
Low gate charge, Low Crss , Fast switching, HF Product.

## ᵛ ᵨ / Applications

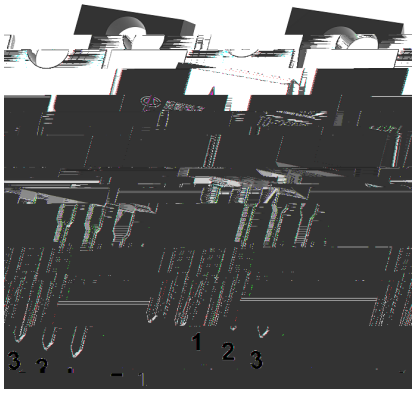
, ,UPS

High efficiency switch mode power supplies, Electronic lamp ballasts based on half bridge, UPS.

## Л ف ٚ ٰ ٪ ع / Equivalent Circuit




## ã ﻥ ٗ / Pinning




PIN1 G PIN 2 D PIN 3 S

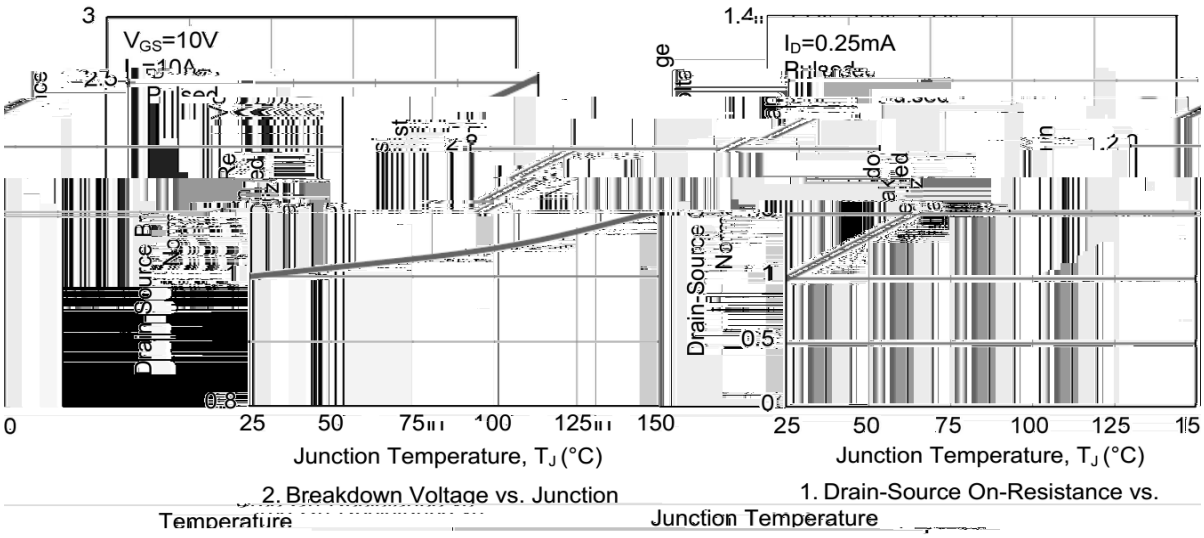
## ł. ʜ ڸ / Marking

See Marking Instructions.

## ≠ ∧ Ǝ Ạ / Electrical Characteristics(Ta=25 ⅃ )

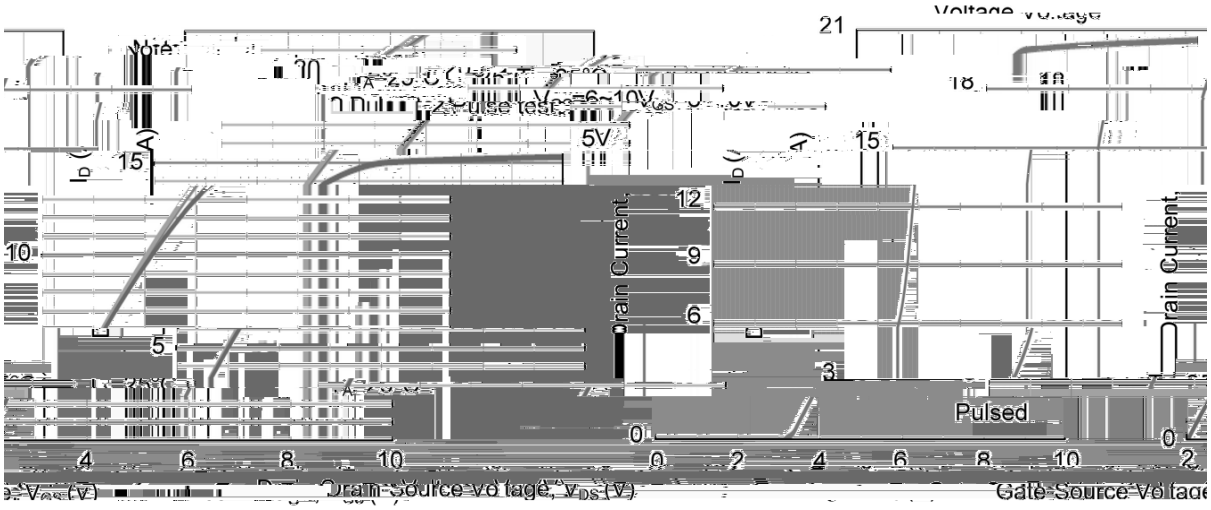
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DD}$=100V $I_D$=20A<br>$V_{GS}$=10V $R_G$=25Ω | | 28 | | ns |
| Turn-On Rise Time | $t_r$ | | | 35 | | |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 135 | | |
| Turn-Off Fall Time | $t_f$ | | | 73 | | |
| Maximum Continuous Drain-Source Diode Forward Current | $I_S$ | | | | 20 | A |
| Maximum Pulsed Drain-Source Diode Forward Current | $I_{SM}$ | | | | 40 | A |
| Reverse Recovery Time | $t_{rr}$ | $V_{GS}$ = 0V $I_S$ = 20A<br>$dI_F/dt$ = 100 A/μs | | 482 | | ns |
| Reverse Recovery Charge | $Q_{rr}$ | | | 8.5 | | μC |

## ≠ Ǝ Ą ´E ∨ ƒ / Electrical Characteristic Curve



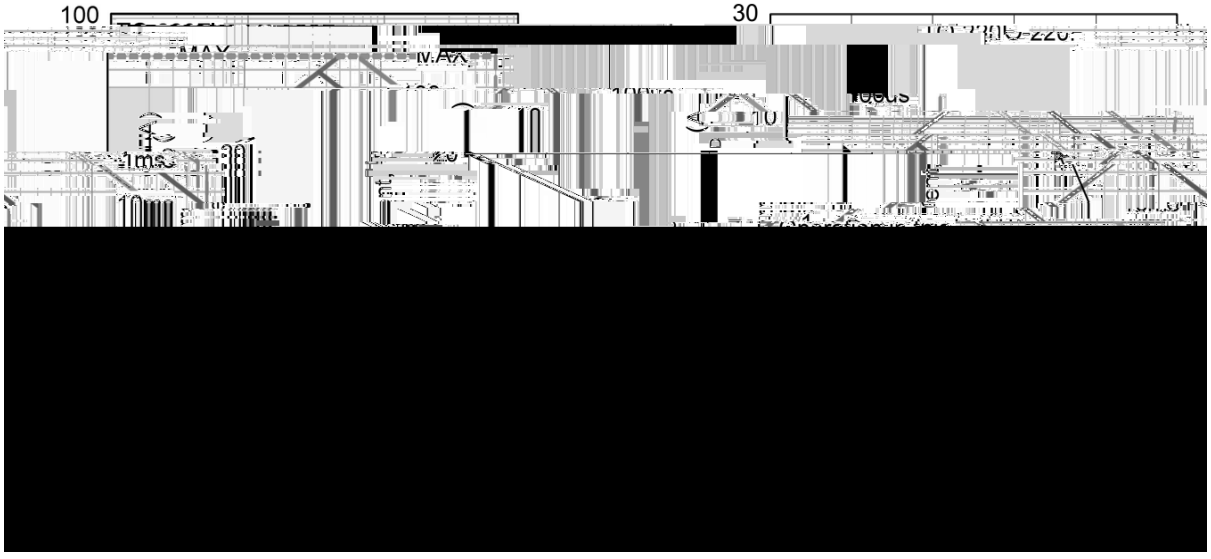

2. Breakdown Voltage vs. Junction Temperature

1. Drain-Source On-Resistance vs. Junction Temperature

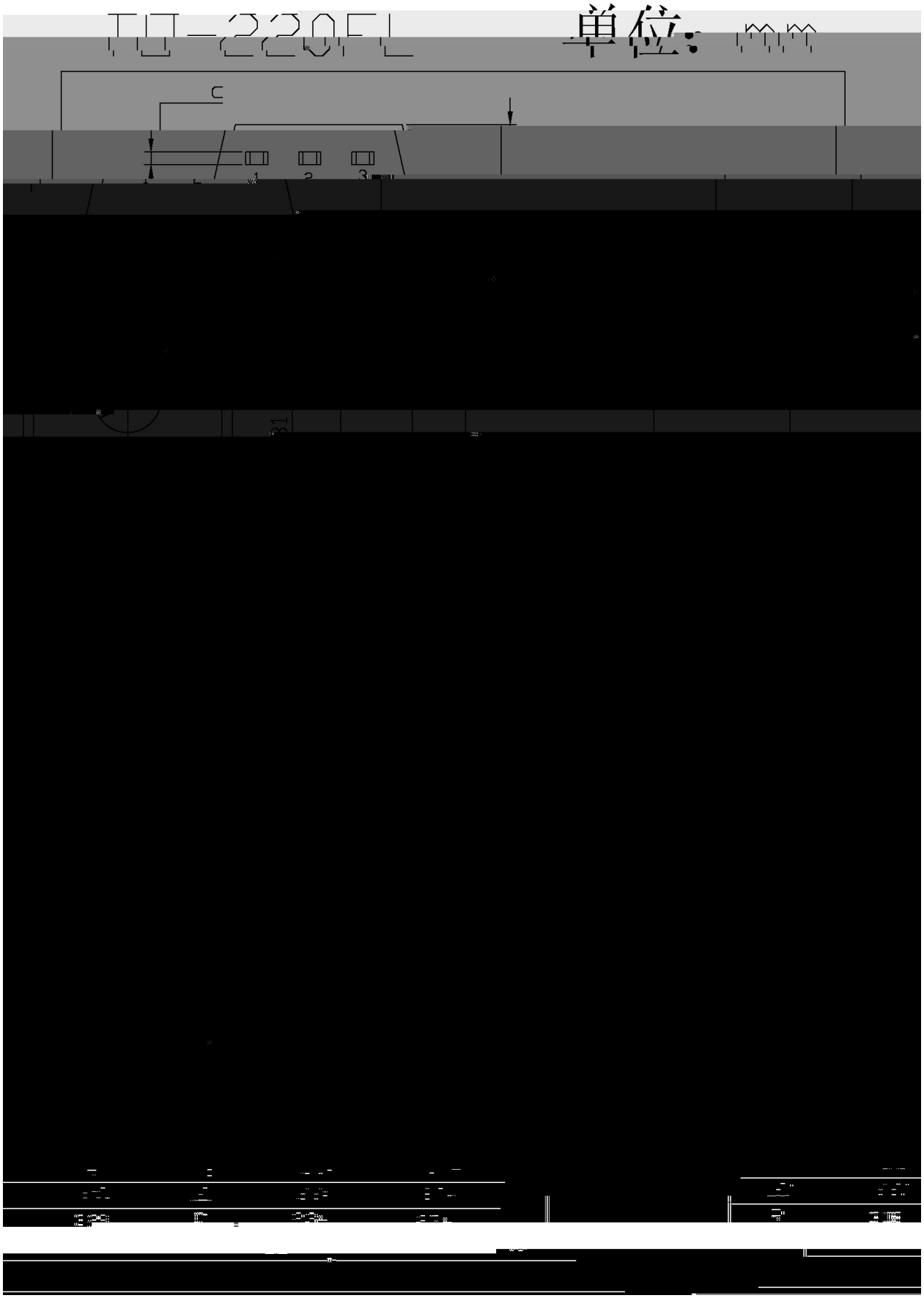



4. Drain Current vs. Gate-Source Voltage

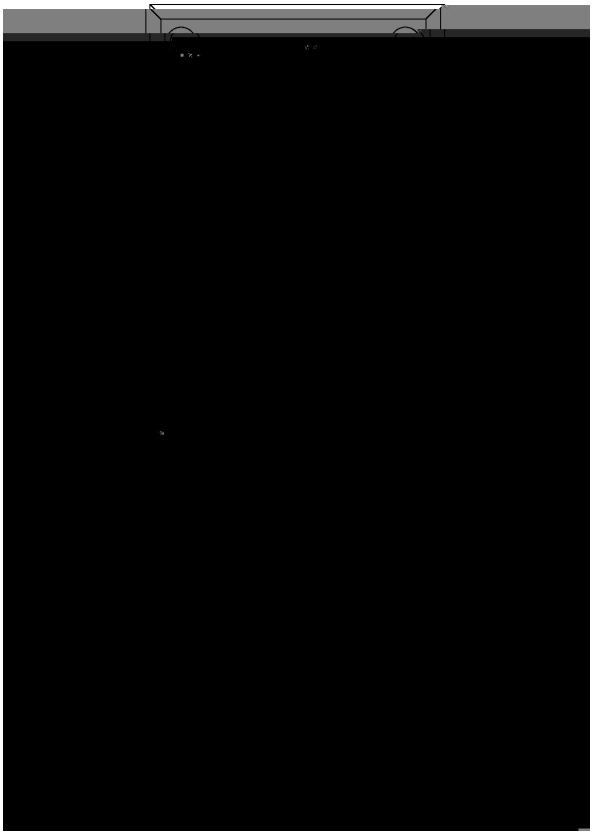
3. Drain Current vs. Drain-Source Voltage



## ᵘ ĖÒĻ ʃ / Package Dimensions



## Ł. Ł Ω / Marking Instructions



BR

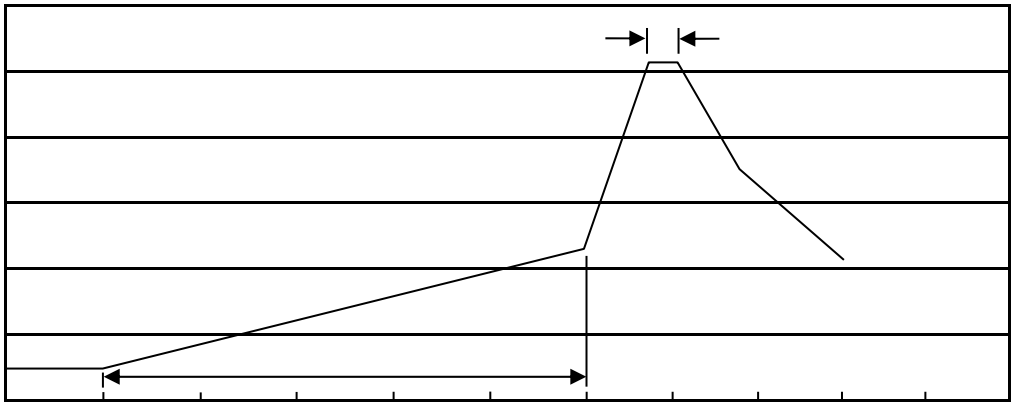
20N70

****

Note:

| | |
|---|---|
| BR: | Company Code |
| 20N70: | Product Type Code |
| ****: | Lot No. Code, code change with Lot No |

## ↓ ș ╕ẘ´E ᛋ ƒ (ᾠƶ) / Temperature Profile for Dip Soldering(Pb-Free)



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. |

## ᛋ ŭ ɋ ˉ`Y Ţ / Resistance to Soldering Heat Test Conditions

| | | | |
|---|---|---|---|
| 270±5 | 10±1 sec. | Temp.:270±5 | Time:10±1 sec |

## ɒ Ŀ ᴄ— / Packaging SPEC.

/ TUBE

| Package Type | Units | | | | | Dimension (unit mm³) | | |
|---|---|---|---|---|---|---|---|---|
| | Units/Tube / | Tubes/Inner Box / | Units/Inner Box / | Inner Boxes/Outer Box / | Units/Outer Box / | Tube | Inner Box | Outer Box |
| TO-220FL | 50 | 20 | 1,000 | 5 | 5,000 | 532×33×7.0 | 555×164×50 | 575×290×180 |

## ä ᴠ ŗ Ꞙ / Notices