

Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit | |
|--|---------------|--|---------|------|----------|----------|----|
| | | | min | typ | max | | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D=1mA, V_{GS}=0V$ | 1500 | | | V | |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=1200V, V_{GS}=0V$ | | | 100 | μA | |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS}=16V, V_{DS}=0V$ | | | ± 10 | μA | |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=10V, I_D=1mA$ | 2.5 | | 3.5 | V | |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=20V, I_D=2A$ | 1.7 | 2.8 | | S | |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)}$ | $I_D=2A, V_{GS}=10V$ | | 5 | 7 | Ω | |
| Input Capacitance | C_{iss} | $V_{DS}=30V, f=1MHz$ | | 790 | | pF | |
| Output Capacitance | C_{oss} | | | | 140 | | pF |
| Reverse Transfer Capacitance | C_{rss} | | | | 70 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See Fig.2 | | 17 | | ns | |
| Rise Time | t_r | | | | 75 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | | | | 360 | | ns |
| Fall Time | t_f | | | | 116 | | ns |
| Total Gate Charge | Q_g | $V_{DS}=200V, V_{GS}=10V, I_D=4A$ | | 80 | | nC | |
| Gate-to-Source Charge | Q_{gs} | | | | 6.4 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | | | | 36 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=4A, V_{GS}=0V$ | | 0.94 | 1.2 | V | |
| Reverse Recovery Time | t_{rr} | $I_S=4A, V_{GS}=0V, dis/dt=100A/\mu s$ | | 340 | | ns | |

Fig.1 Avalanche Resistance Test Circuit

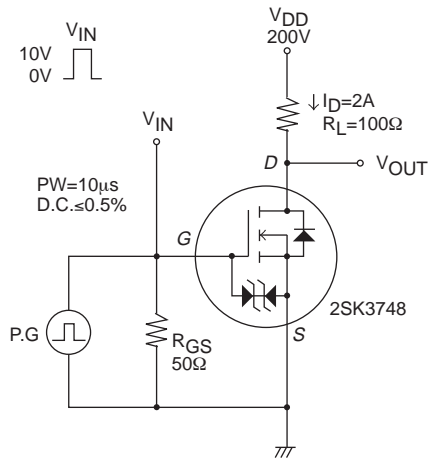
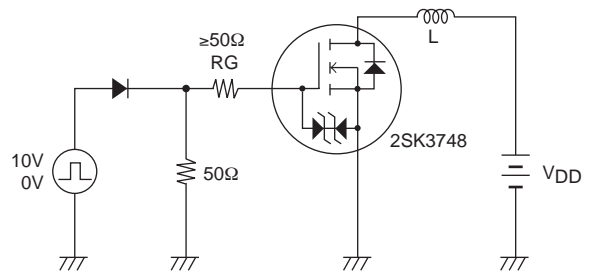
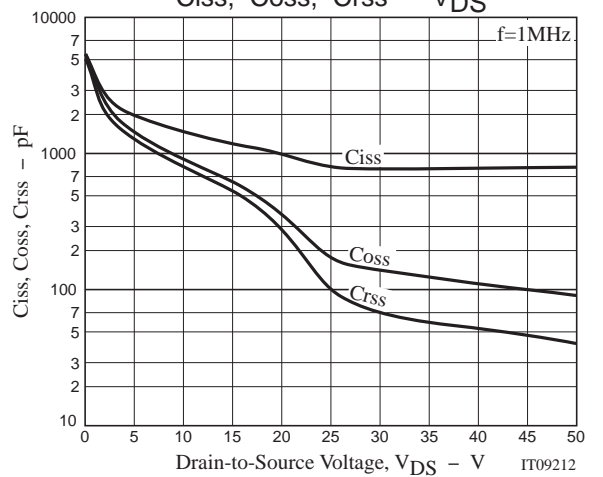
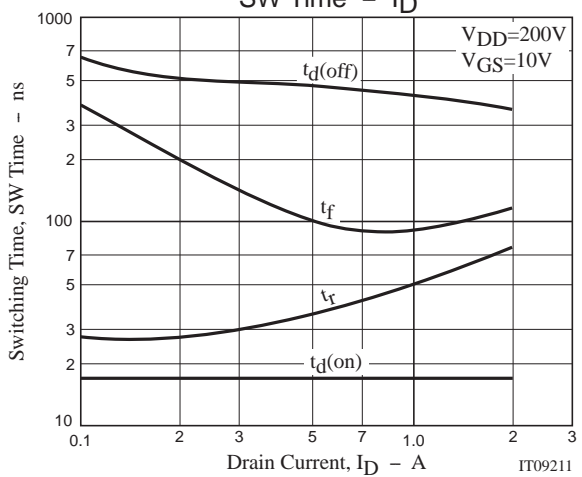
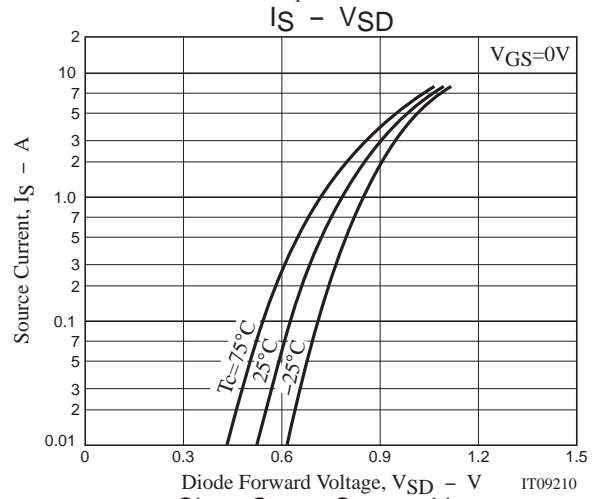
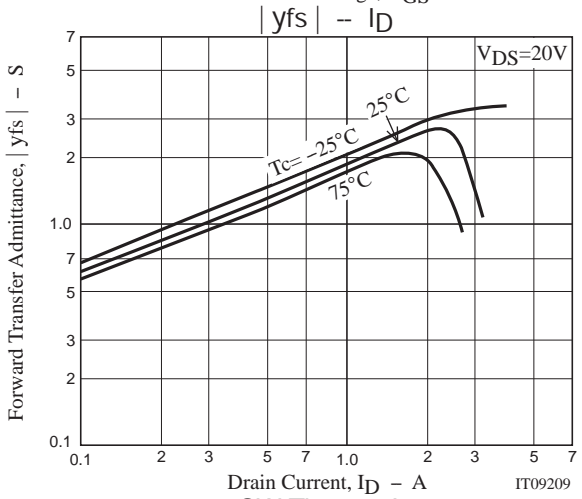
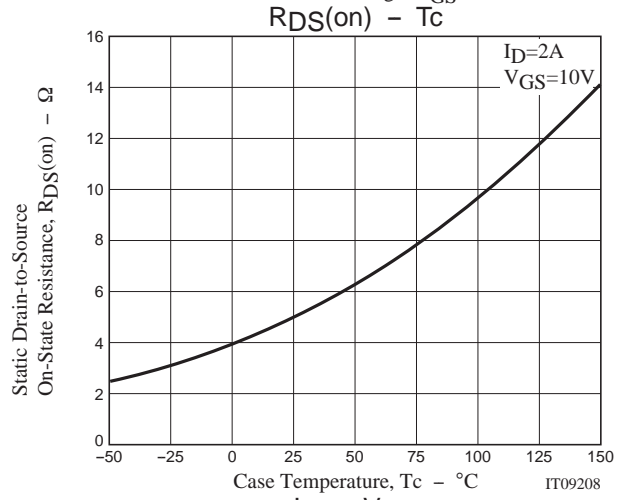
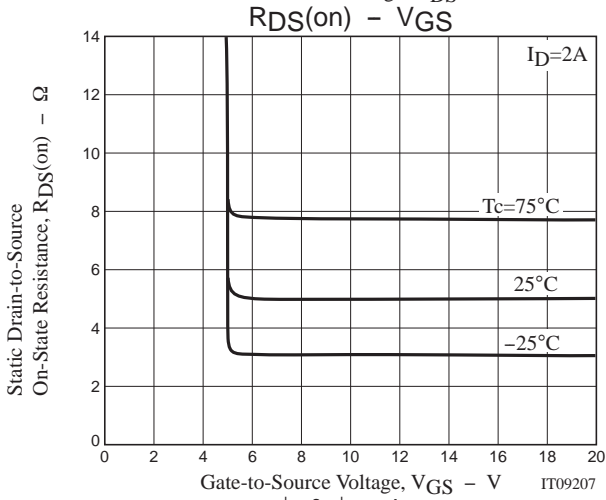
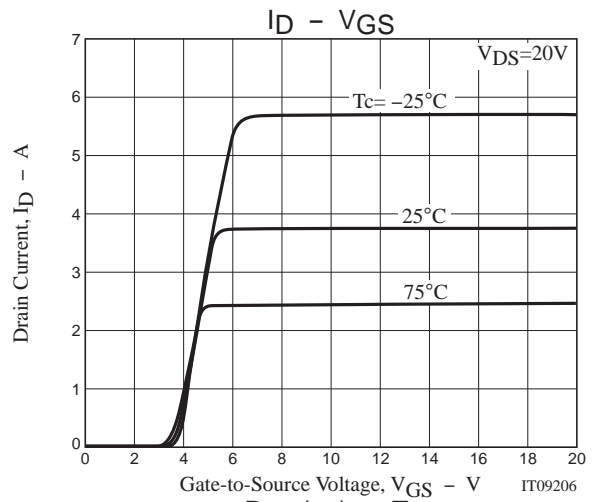
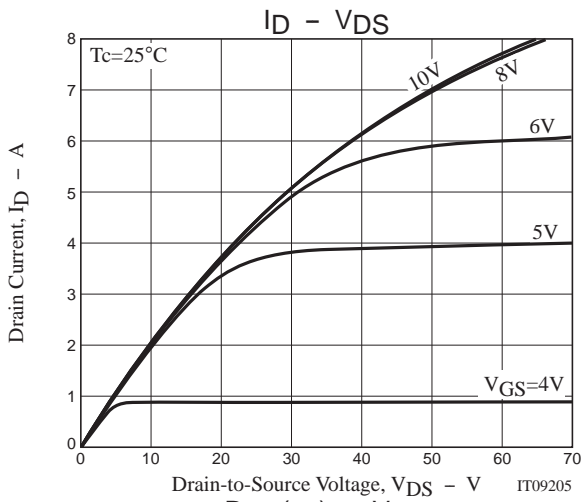


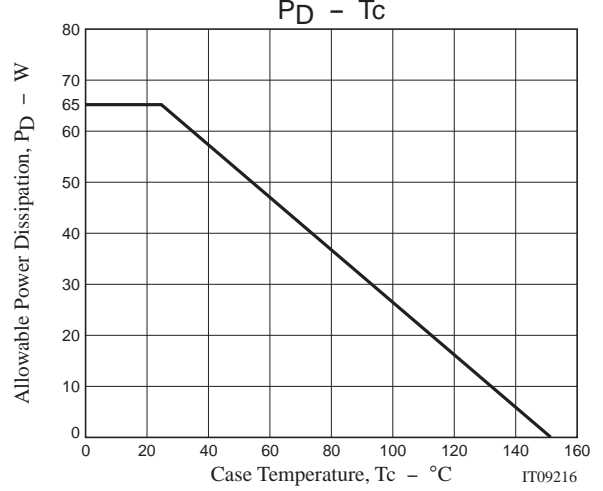
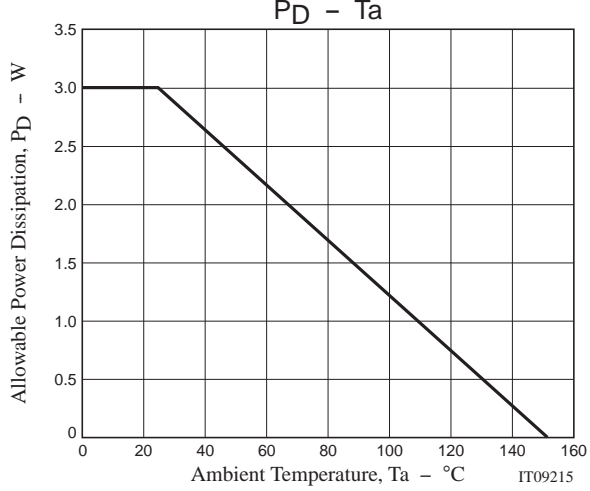
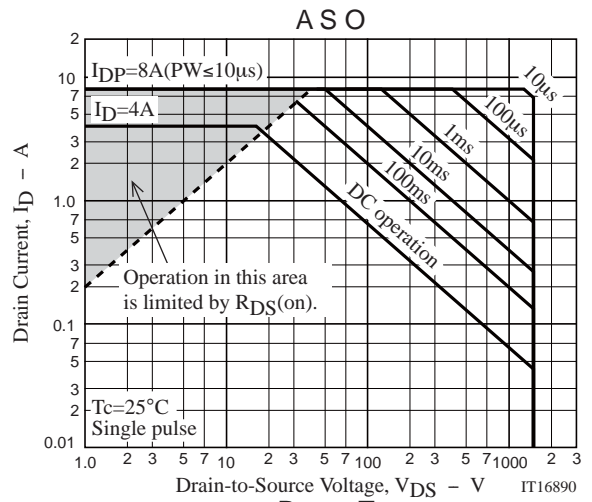
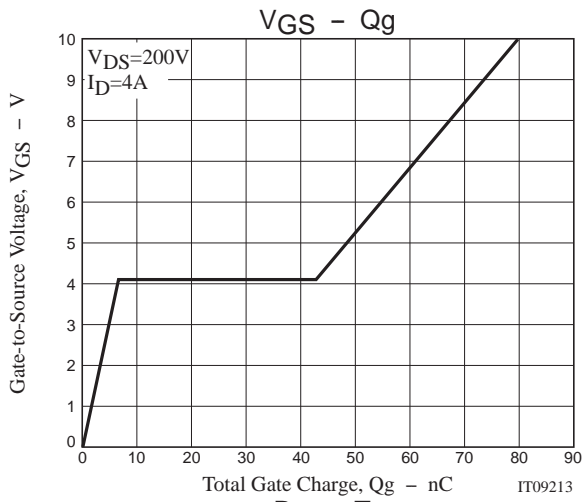
Fig.2 Switching Time Test Circuit



Ordering Information

| Device | Package | Shipping | memo |
|------------|-----------|-----------------|---------|
| 2SK3748-1E | TO-3PF-3L | 30pcs./magazine | Pb Free |





Magazine Specification

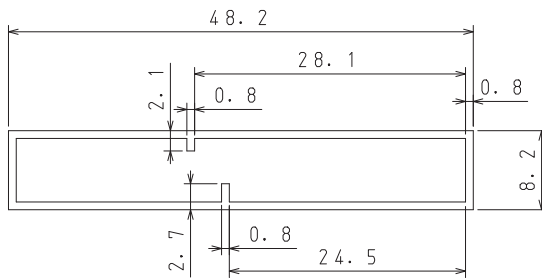
2SK3748-1E

1. Packing Format

| Package Name | Maximum Number of devices contained (pcs) | | | Packing format | |
|--------------|---|-----------|-----------|--|--|
| | Magazine | Inner box | Outer box | Inner BOX | Outer BOX |
| TO-3PF-3L | 30 | 360 | 1440 | SPD-0V0001 12 magazines contained Dimensions:mm (external) 568×150×55 | SPD-LV0010 4 inner boxes contained Dimensions:mm (external) 590×225×178 |

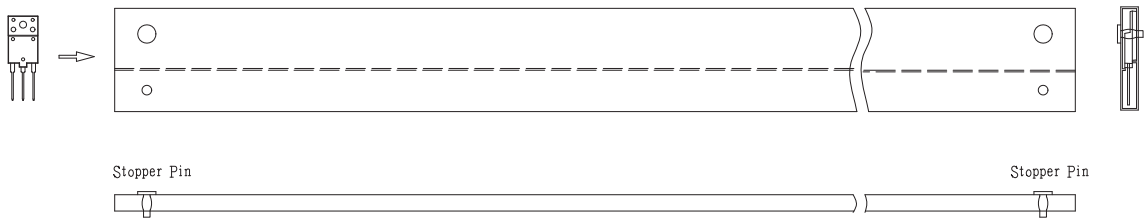
2. Magazine dimensions

(unit:mm)



Tolerance=±0.2mm
 Thickness=0.8±0.2mm
 Length =508.0±1mm
 Material =PVC or PET
 (Antistatic treatment)

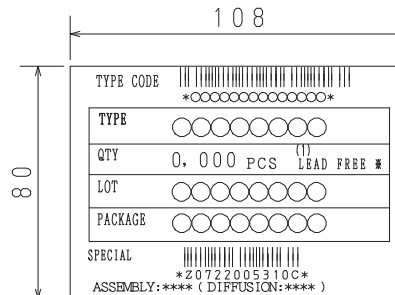
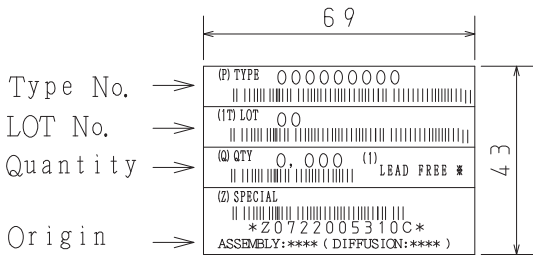
3. Storage method to magazine



4. Inner box label (unit:mm)

5. Outer box label (unit:mm)

It is a label at the time of factory shipments.
 The form of a label may change in physical distribution process.



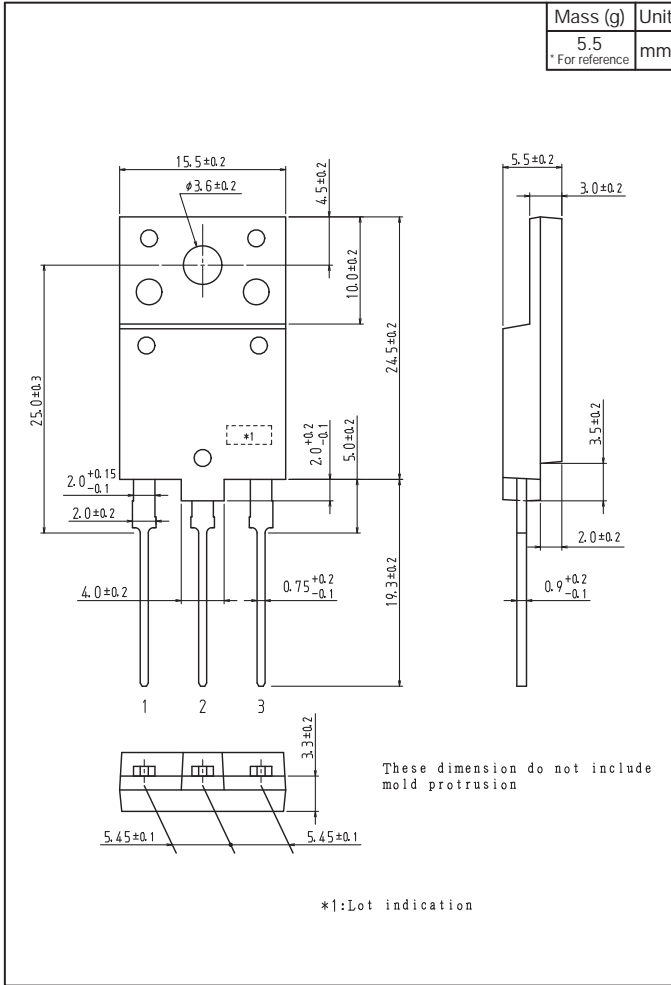
NOTE (1)

The LEAD FREE * description shows that the surface treatment of the terminal is lead free,

| Label | JEITA Phase |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |

Outline Drawing

2SK3748-1E



Note on usage : Since the 2SK3748 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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