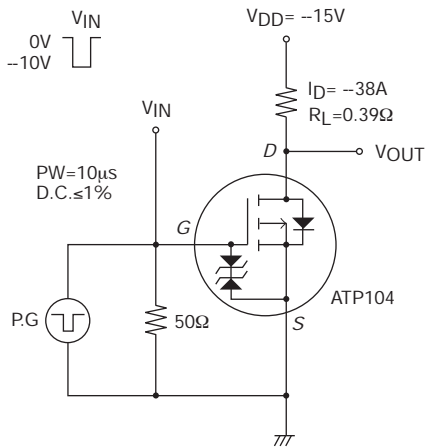


ATP104

Electrical Characteristics at Ta=25°C

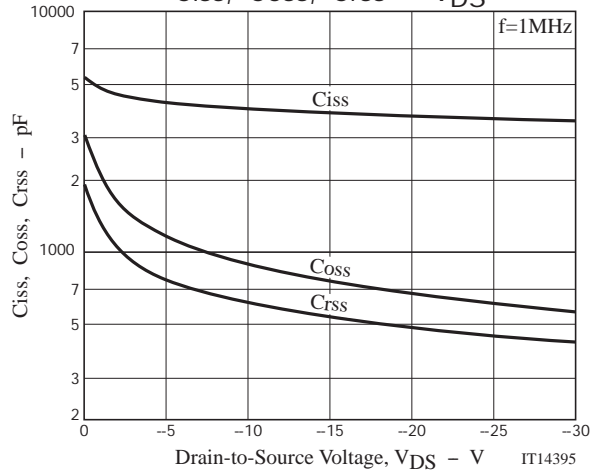
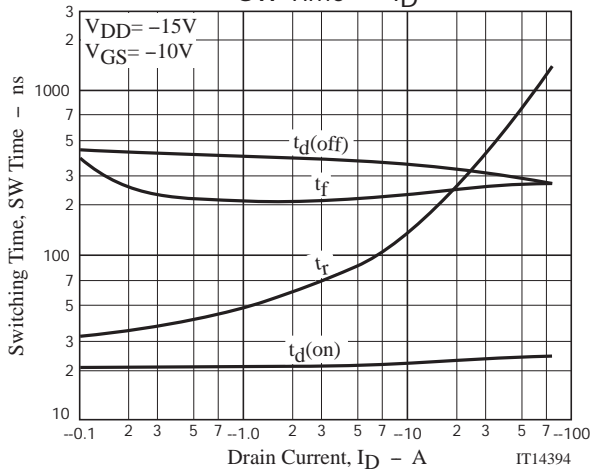
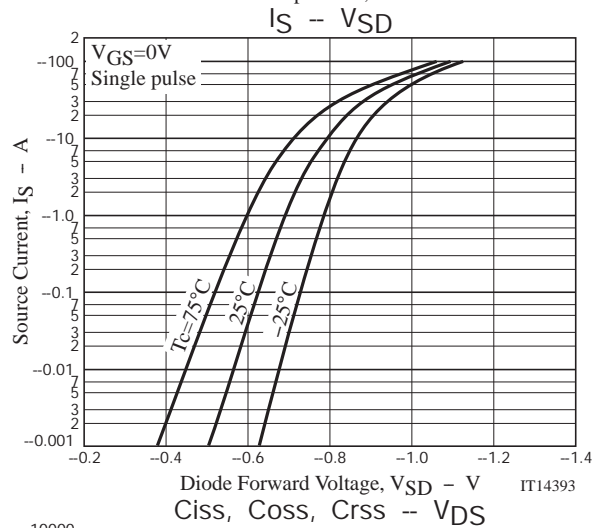
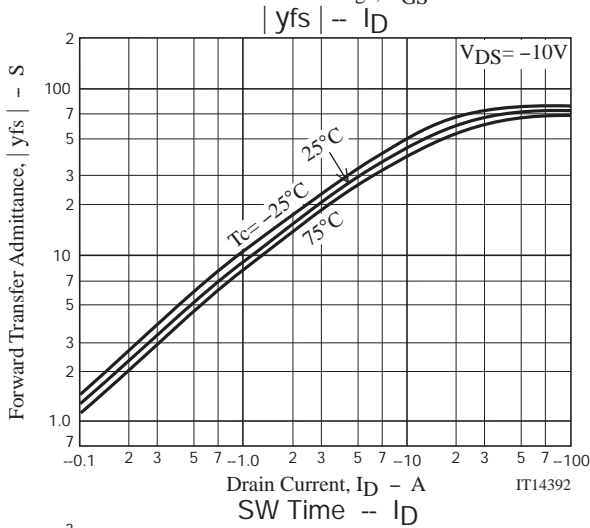
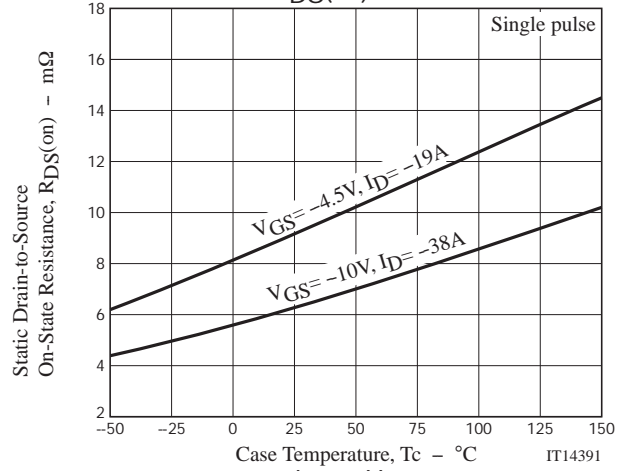
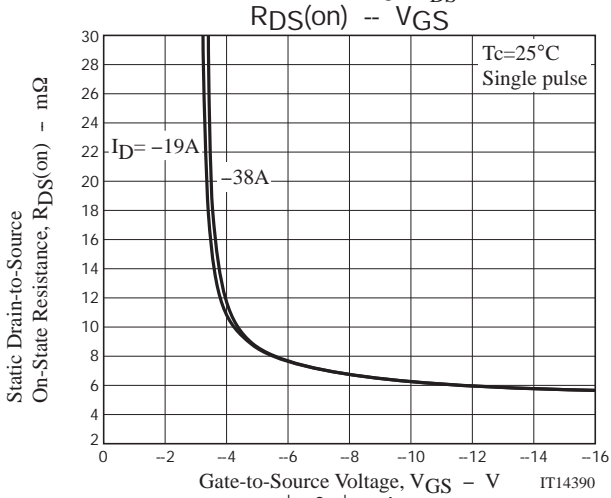
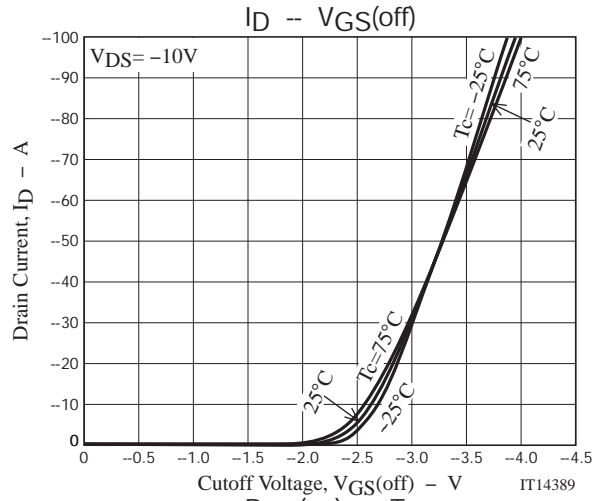
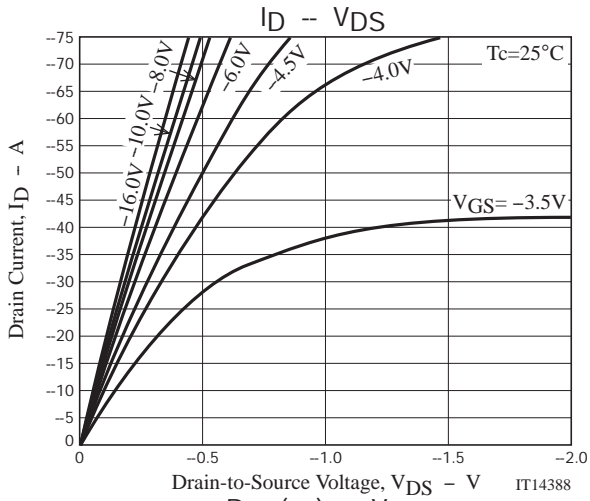
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|----------------------|--|---|-------|------|------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | V(BR)DSS | I _D =-1mA, V _{GS} =0V | -30 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =-30V, V _{GS} =0V | | | -1 | 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 | -1.2 | | -2.6 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =-10V, I _D =-38A | | 70 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS(on)1} | I _D =-38A, V _{GS} =-10V | | 6.4 | 8.4 | mΩ |
| | R _{DS(on)2} | I _D =-19A, V _{GS} =-4.5V | | 9.6 | 13.5 | mΩ |
| Input Capacitance | C _{iss} | V _{DS} =-10V, f=1MHz | | 3950 | | pF |
| Output Capacitance | C _{oss} | | | 880 | | pF |
| Reverse Transfer Capacitance | C _{rss} | | | 610 | | pF |
| Turn-ON Delay Time | t _{d(on)} | | | 24 | | ns |
| Rise Time | t _r | See specified Test Circuit. | | 520 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | | | 290 | | ns |
| Fall Time | t _f | | | 260 | | ns |
| Total Gate Charge | Q _g | | | 76 | | nC |
| Gate-to-Source Charge | Q _{gs} | V _{DS} =-15V, V _{GS} =-10V, I _D =-75A | | 18 | | nC |
| Gate-to-Drain "Miller" Charge | Q _{gd} | | | 13 | | nC |
| Diode Forward Voltage | V _{SD} | | I _S =-75A, V _{GS} =0V | -1.02 | | -1.5 |

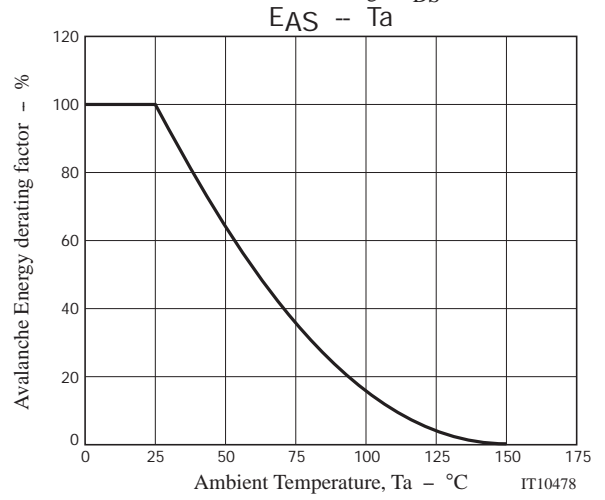
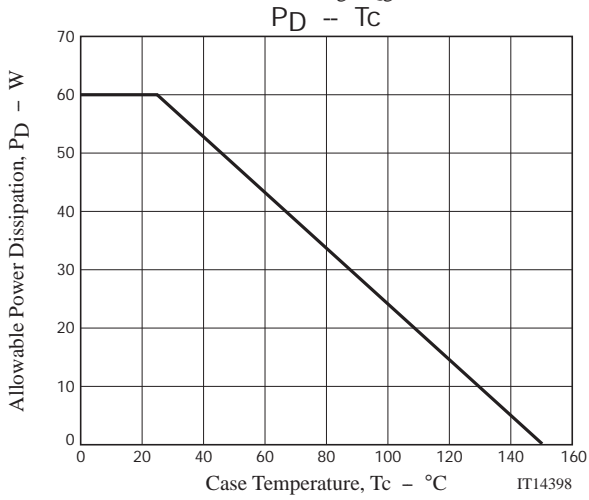
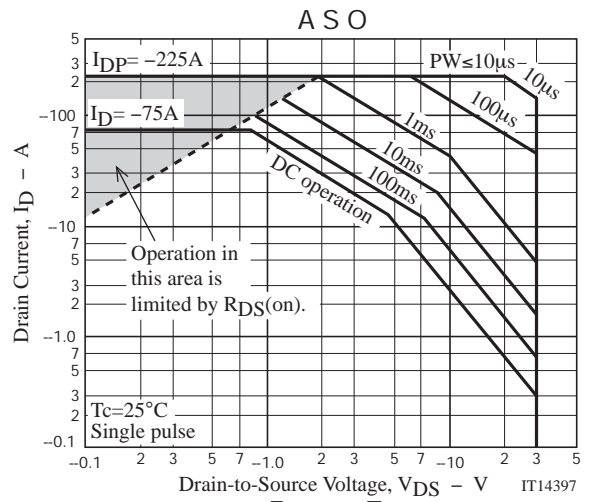
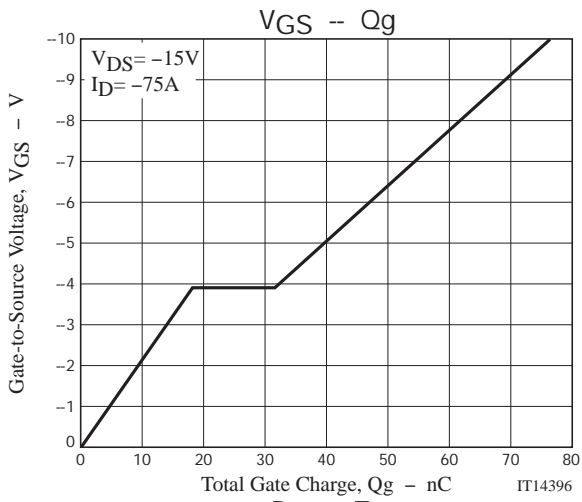
Switching Time Test Circuit



Ordering Information

| Device | Package | Shipping | memo |
|-------------|---------|----------------|--------------------------|
| ATP104-TL-H | ATPAK | 3,000pcs./reel | Pb Free and Halogen Free |





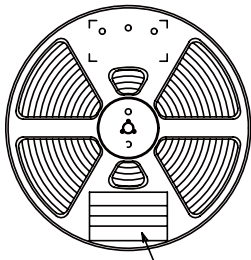
Taping Specification

ATP104-TL-H

1. Packing Format (TL)

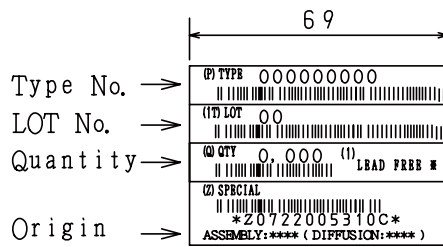
| Package Name | Carrier Tape Type | Maximum Number of devices contained (pcs) | | | Packing format | |
|--------------|-------------------|---|-----------|-----------|---|--|
| | | Reel | Inner box | Outer box | INNER BOX SD-C-18 | OUTER BOX SD-A-18 |
| ATPAK | ATP | 3,000 | 3,000 | 15,000 | 1 reels contained Dimensions:mm (external) 340×340×28 | 5 inner boxes contained Dimensions:mm (external) 355×355×165 |

Packing method



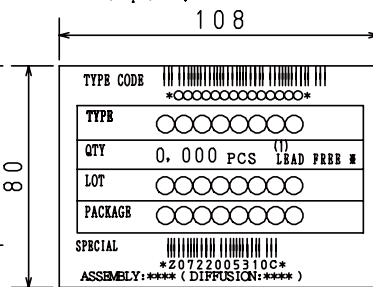
Reel label

Reel label, Inner box label
(unit:mm)



Outer box label

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



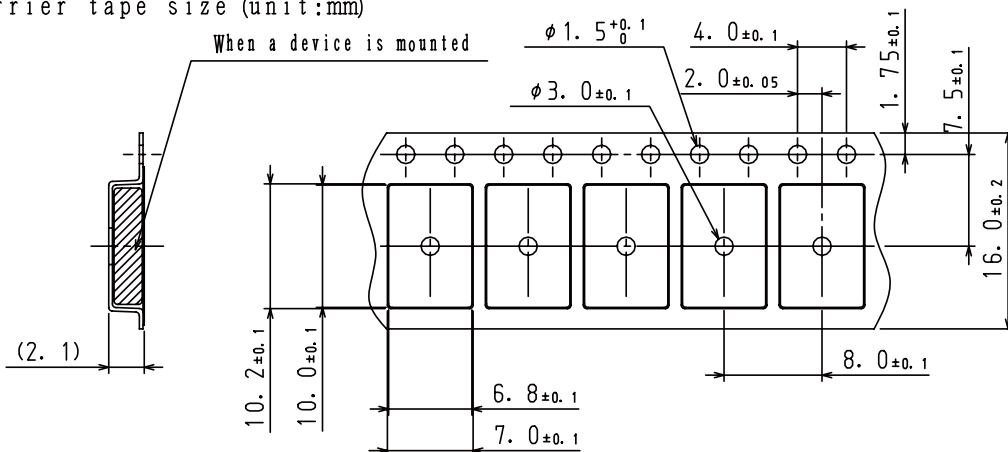
NOTE (1)

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

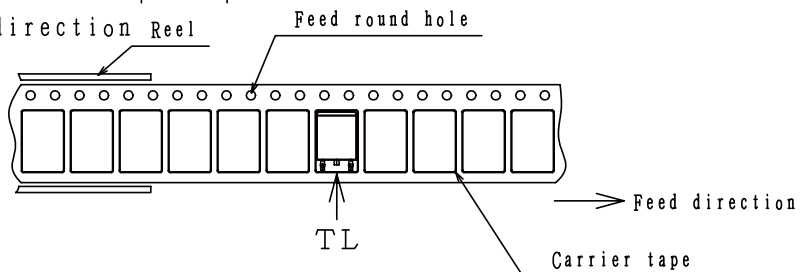
| Label | JEITA Phase |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

2. Taping configuration

2-1. Carrier tape size (unit:mm)



2-2. Device placement direction Reel

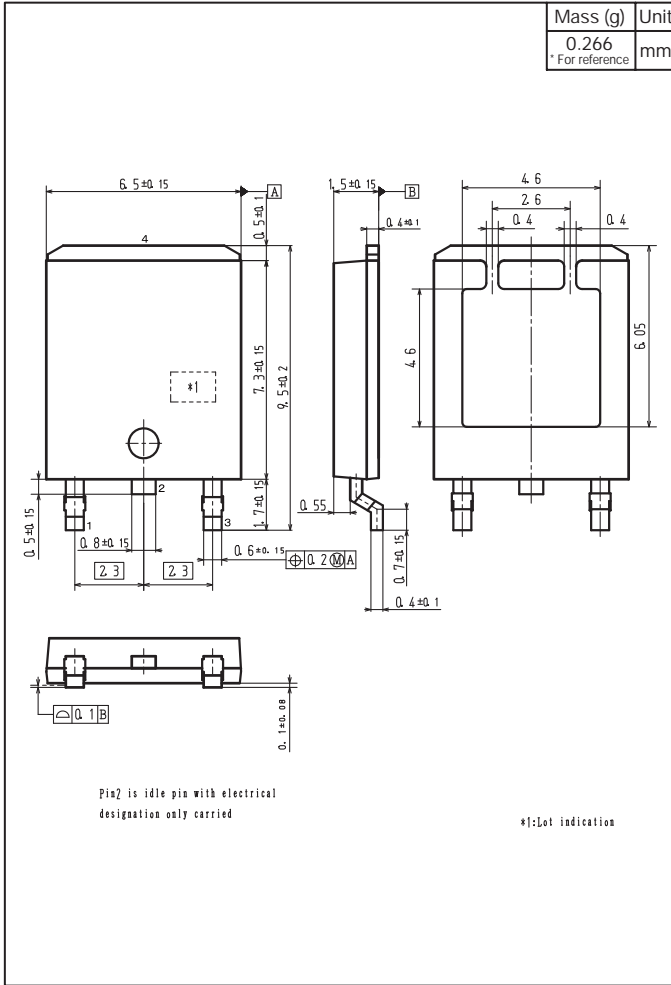


The one electrode terminals on feed hole side...TL

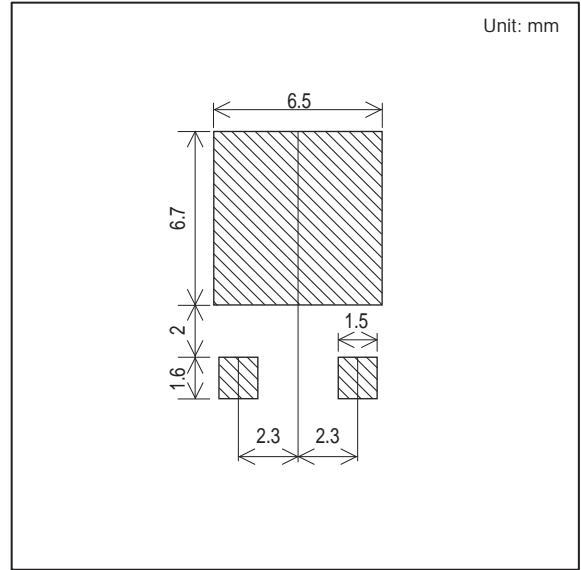
ATP104

Outline Drawing

ATP104-TL-H



Land Pattern Example



Note on usage : Since the ATP104 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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