



ATP104

P-Channel Power MOSFET -30V, -75A, 8.4mΩ, Single ATPAK

ON Semiconductor®

<http://onsemi.com>

Features

- Low ON-resistance
- Slim package
- Halogen free compliance
- Large current
- 4.5V drive
- Protection diode in

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-30	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		-75	A
Drain Current (PW≤10μs)	I _{DP}	PW≤10μs, duty cycle≤1%	-225	A
Allowable Power Dissipation	P _D	Tc=25°C	60	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E _{AS}		130	mJ
Avalanche Current *2	I _{AV}		38	A

Note : *1 V_{DD}=15V, L=100μH, I_{AV}=38A

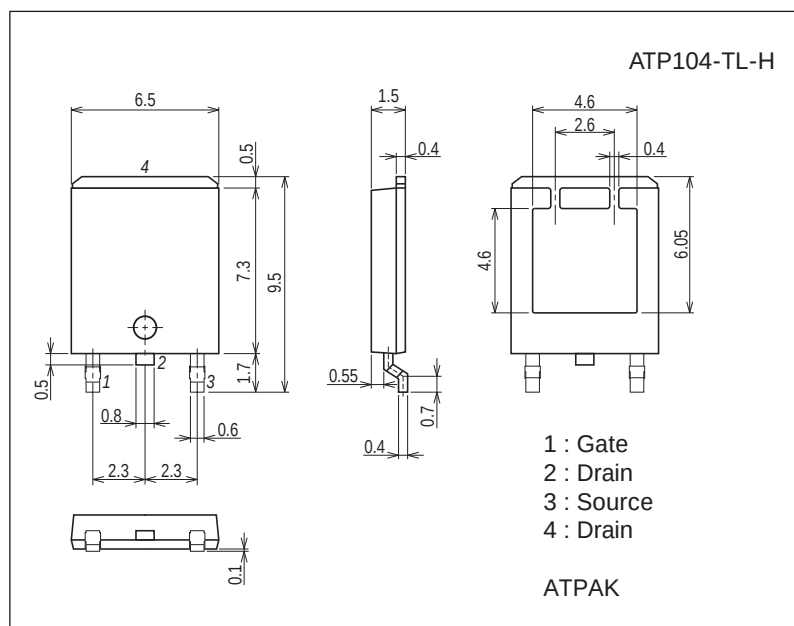
*2 L≤100μH, Single pulse

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

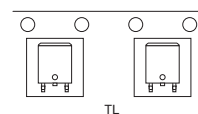
7057-001



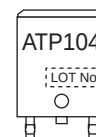
Product & Package Information

- Package : ATPAK
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

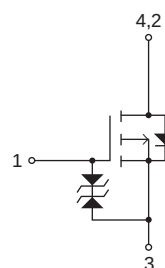
Packing Type: TL



Marking



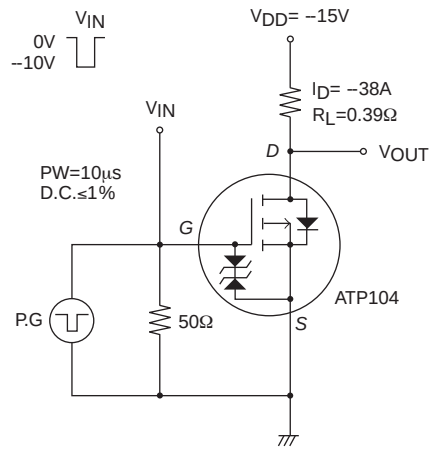
Electrical Connection



Electrical Characteristics at Ta=25°C

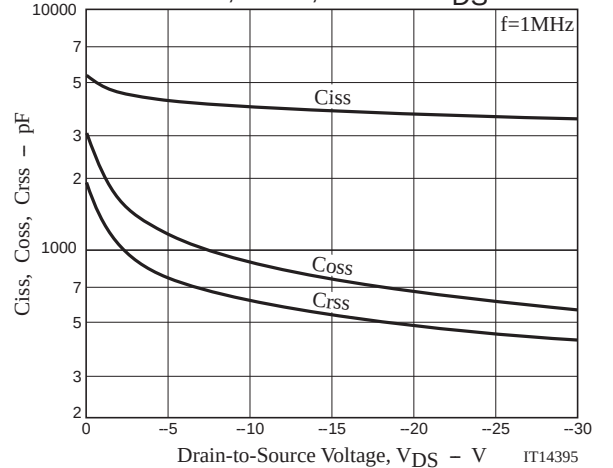
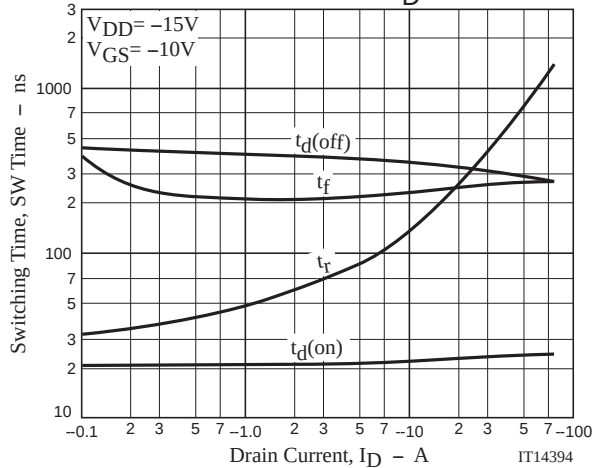
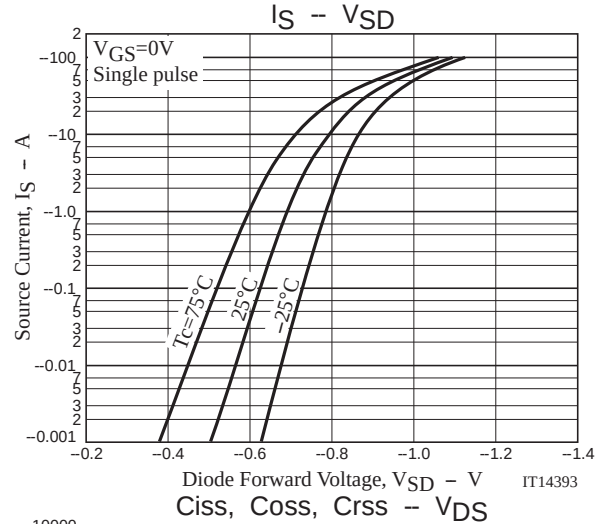
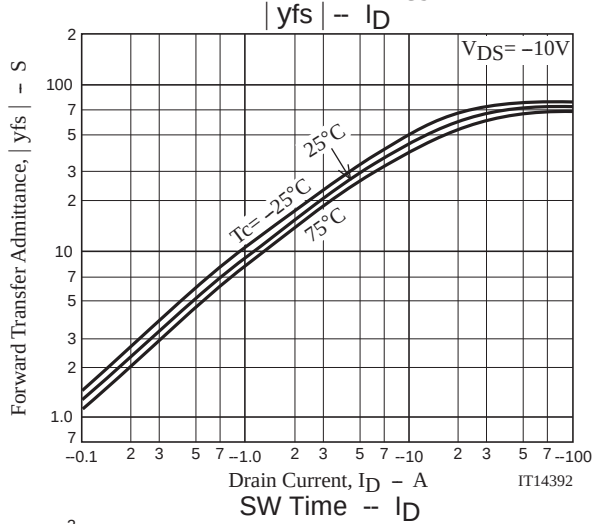
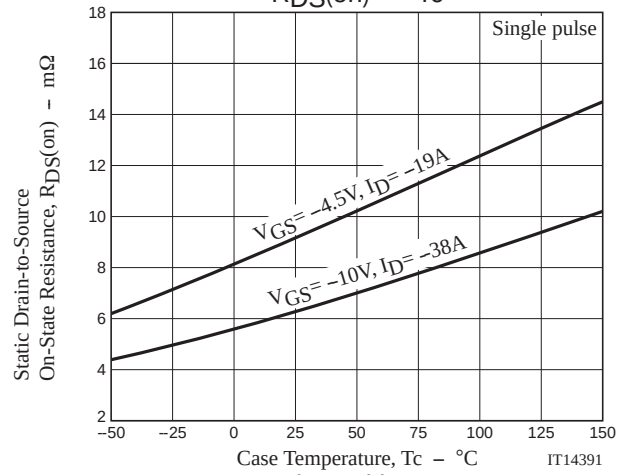
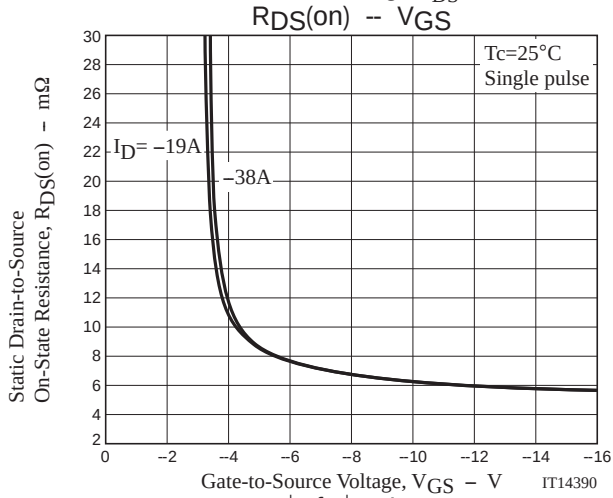
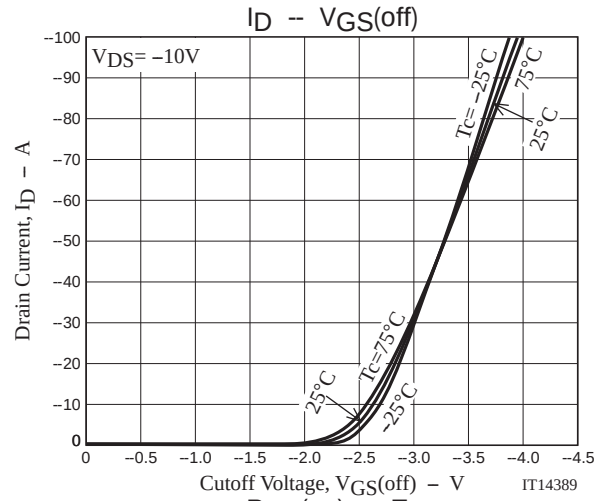
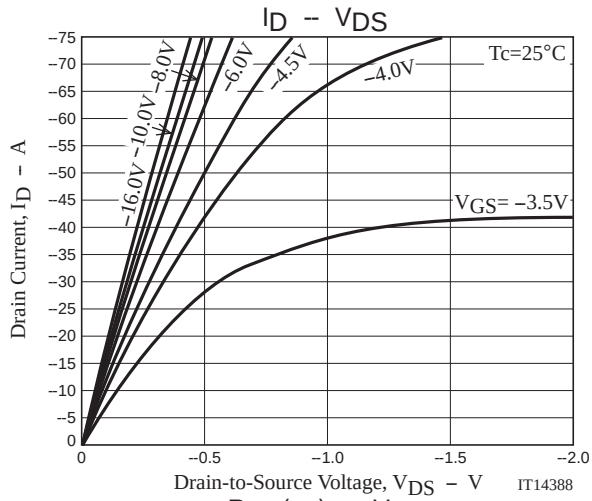
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=-1mA, VGS=0V	-30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=-30V, VGS=0V			-1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±16V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=-10V, ID=-1mA	-1.2		-2.6	V
Forward Transfer Admittance	yfs	VDS=-10V, ID=-38A		70		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=-38A, VGS=-10V		6.4	8.4	mΩ
	RDS(on)2	ID=-19A, VGS=-4.5V		9.6	13.5	mΩ
Input Capacitance	Ciss	VDS=-10V, f=1MHz		3950		pF
Output Capacitance	Coss			880		pF
Reverse Transfer Capacitance	Crss			610		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		24		ns
Rise Time	tr			520		ns
Turn-OFF Delay Time	td(off)			290		ns
Fall Time	tf			260		ns
Total Gate Charge	Qg	VDS=-15V, VGS=-10V, ID=-75A		76		nC
Gate-to-Source Charge	Qgs			18		nC
Gate-to-Drain "Miller" Charge	Qgd			13		nC
Diode Forward Voltage	VSD	IS=-75A, VGS=0V		-1.02	-1.5	V

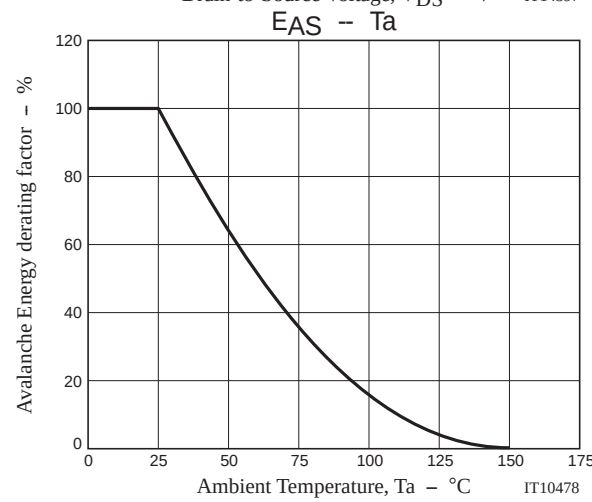
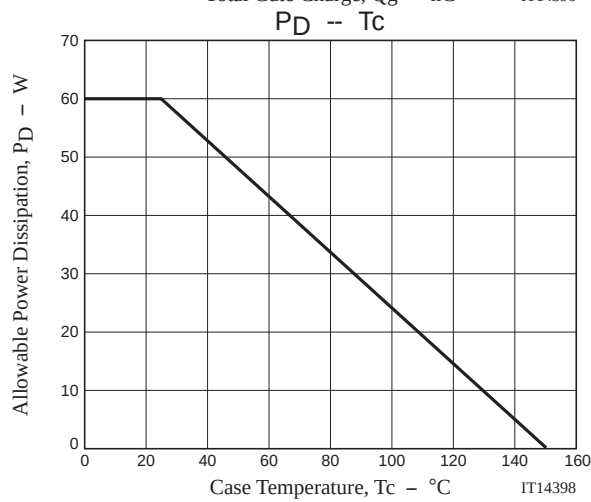
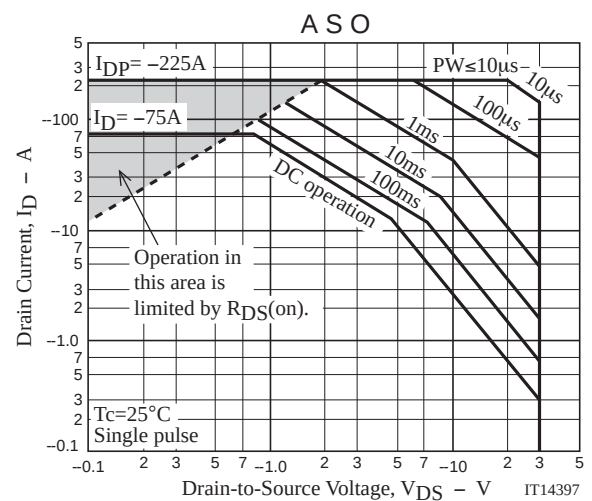
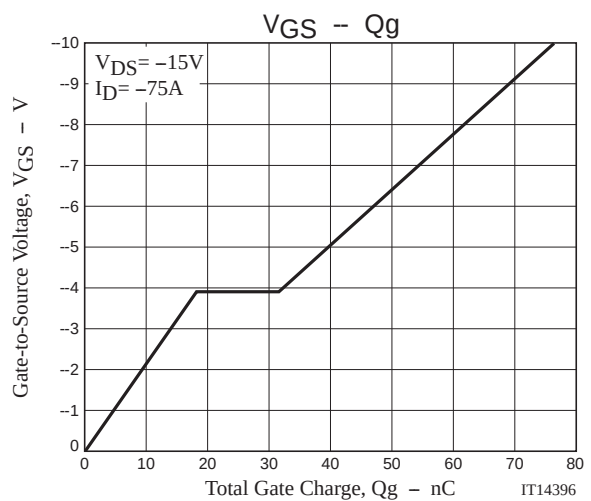
Switching Time Test Circuit



Ordering Information

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





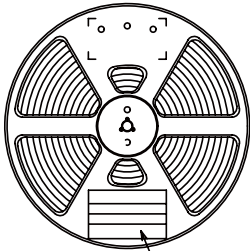
Taping Specification

ATP104-TL-H

1. Packing Format (TL)

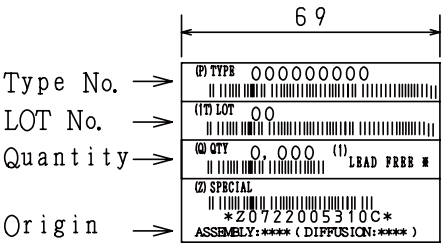
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	INNER BOX SD-C-18	OUTER BOX SD-A-18
ATPAK	ATP	3, 000	3, 000	15, 000	1 reels contained Dimensions:mm (external) 3 4 0×3 4 0×2 8	5 inner boxes contained Dimensions:mm (external) 3 5 5×3 5 5×1 6 5

Packing method



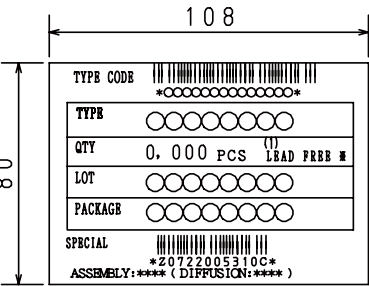
Reel label

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.



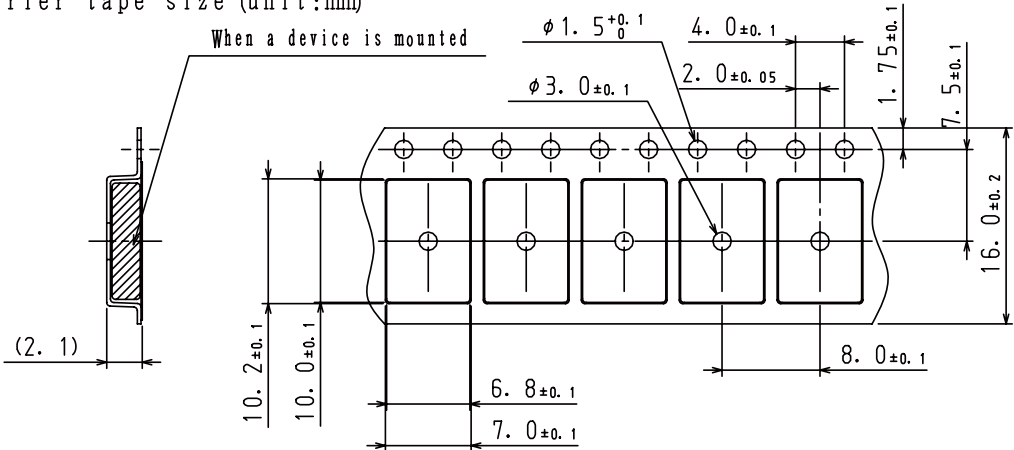
NOTE (1)

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

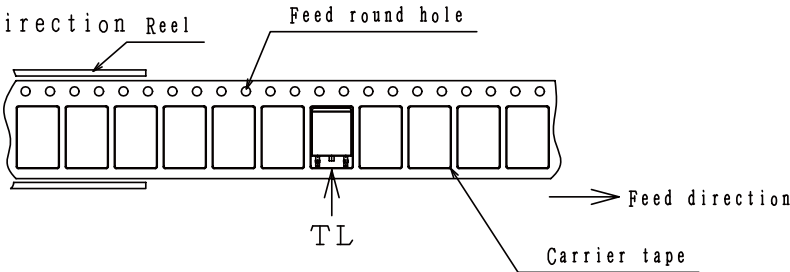
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



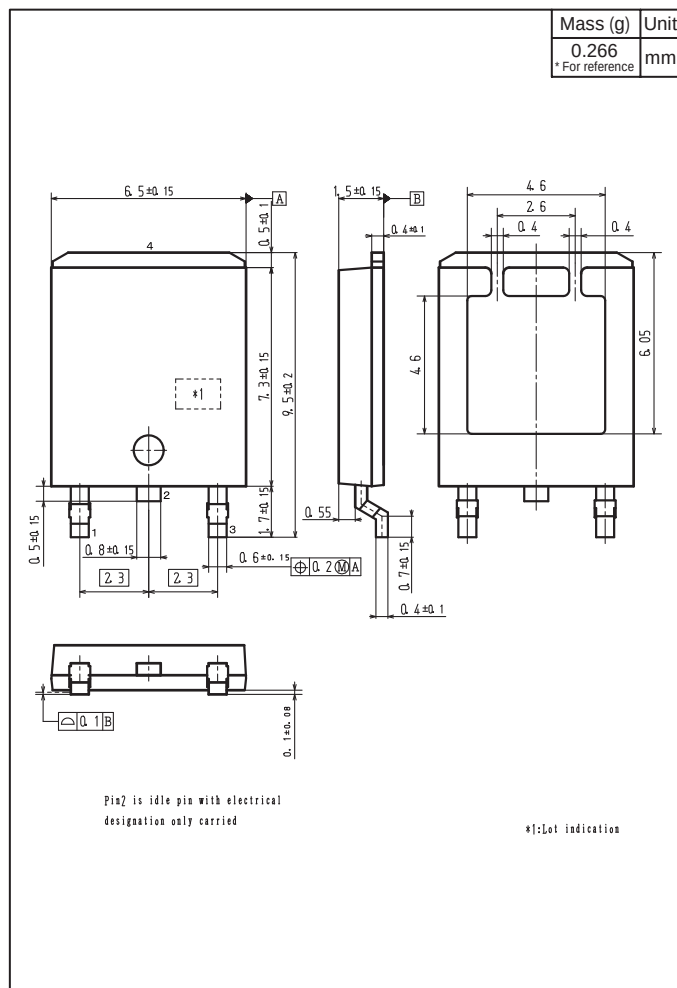
2-2. Device placement direction Reel



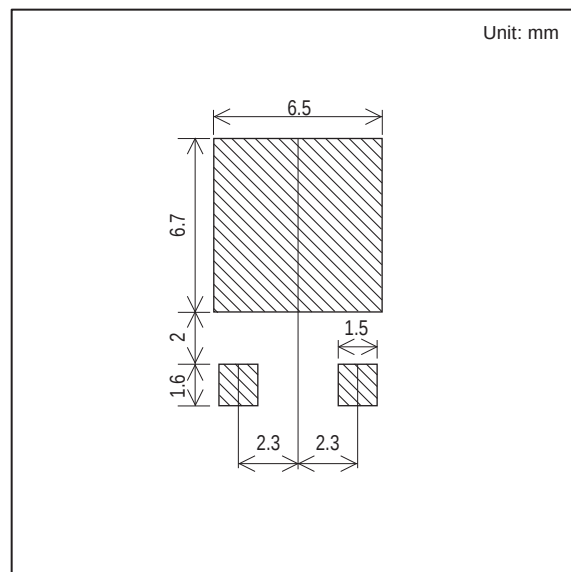
The one electode terminals on feed hole side...TL

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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