



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

ATP106 — General-Purpose Switching Device Applications

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}		-40	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		-30	A
Drain Current (PW≤10μs)	I _{DP}	PW≤10μs, duty cycle≤1%	-90	A
Allowable Power Dissipation	P _D	Tc=25°C	40	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E _{AS}		30	mJ
Avalanche Current *2	I _{AV}		-15	A

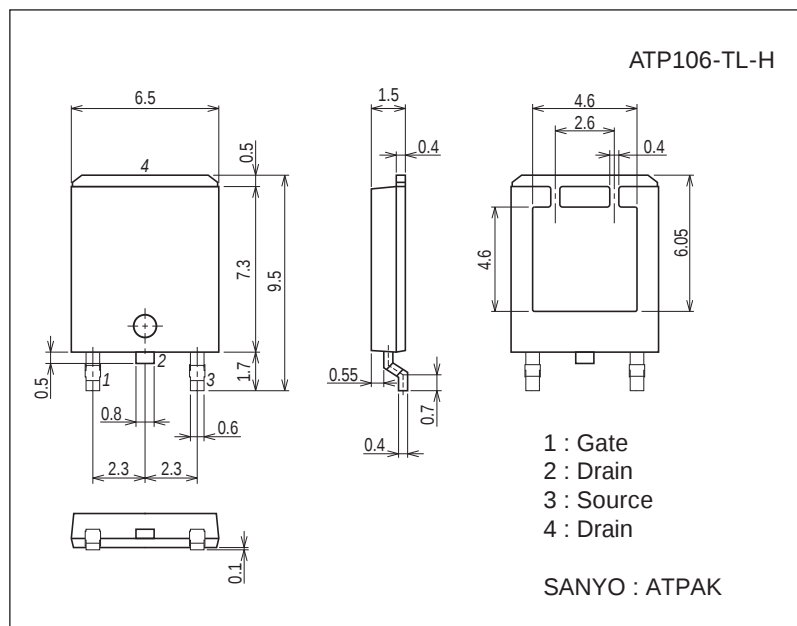
Note : *1 V_{DD}=-10V, L=200μH, I_{AV}=-15A

*2 L≤200μH, Single pulse

Package Dimensions

unit : mm (typ)

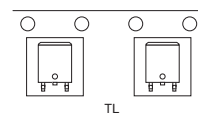
7057-001



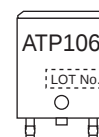
Product & Package Information

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

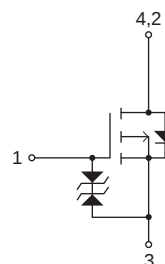
Packing Type: TL



Marking



Electrical Connection

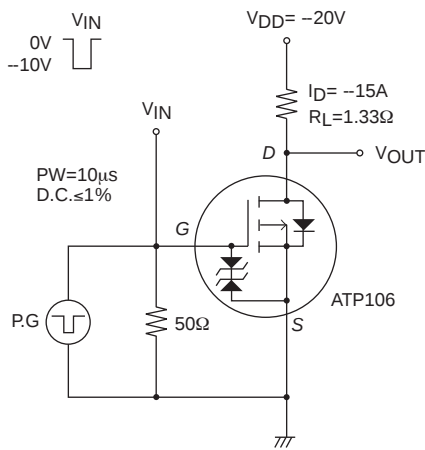


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Electrical Characteristics at Ta=25°C

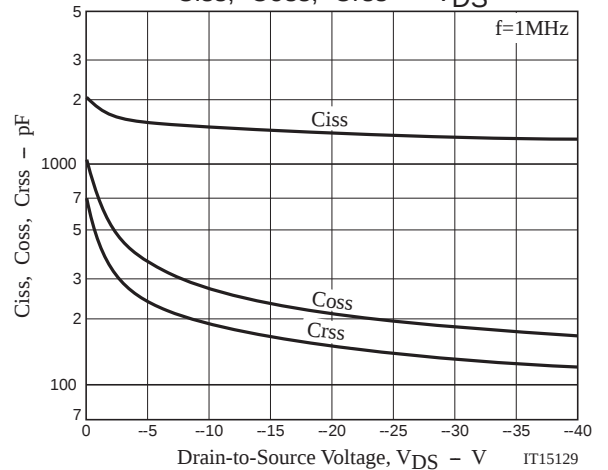
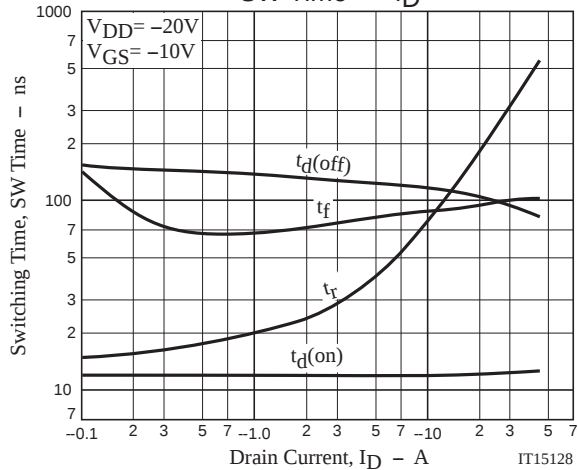
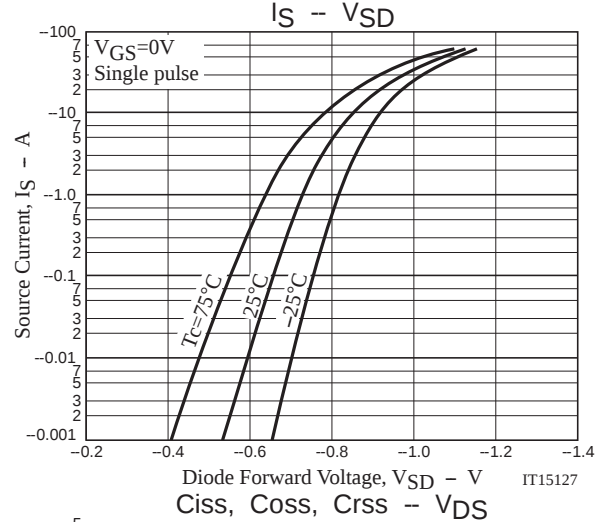
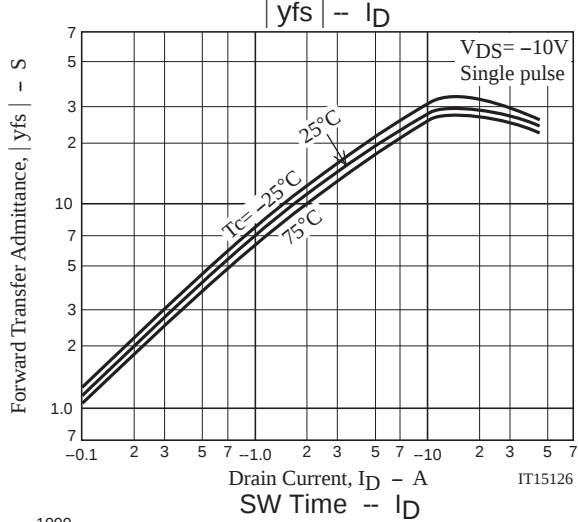
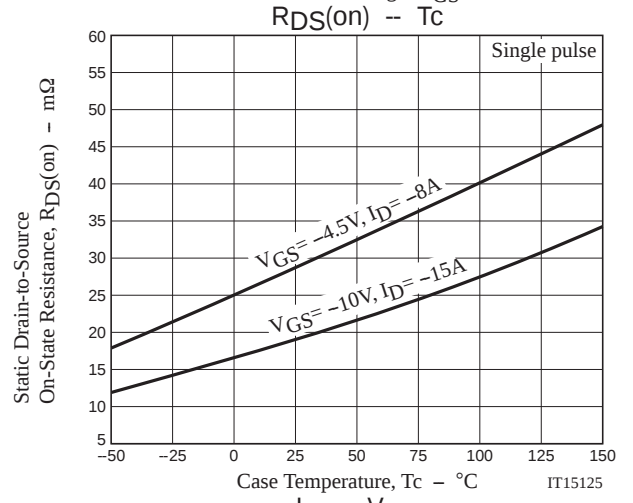
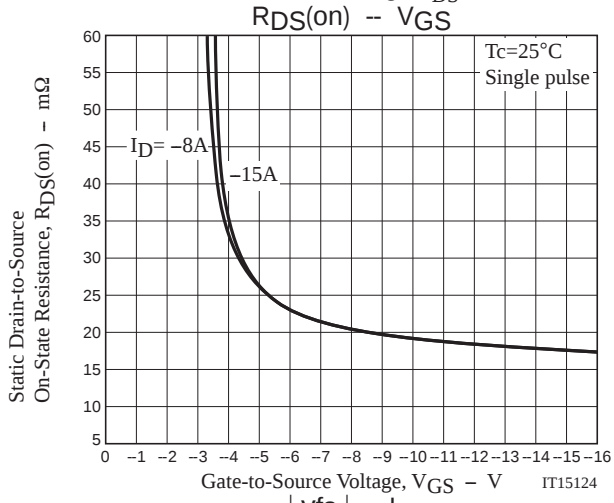
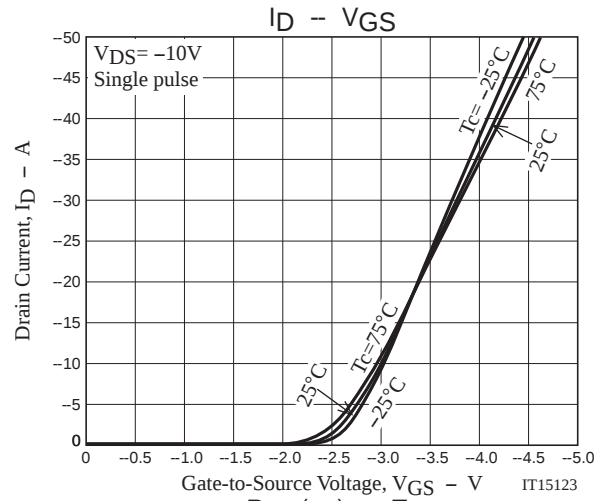
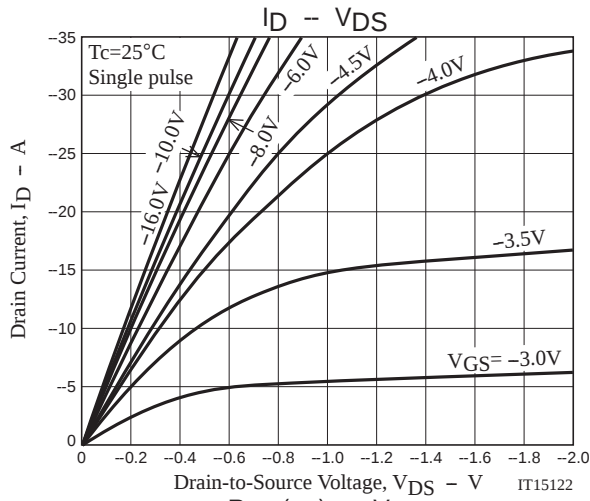
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1mA, V_{GS}=0V$	-40			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-40V, V_{GS}=0V$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10V, I_D=-1mA$	-1.5		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-15A$		28		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-15A, V_{GS}=-10V$		19	25	$m\Omega$
	$R_{DS(on)2}$	$I_D=-8A, V_{GS}=-4.5V$		29	41	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-20V, f=1MHz$		1380		pF
Output Capacitance	C_{oss}			210		pF
Reverse Transfer Capacitance	C_{rss}			150		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		12		ns
Rise Time	t_r			120		ns
Turn-OFF Delay Time	$t_{d(off)}$			110		ns
Fall Time	t_f			90		ns
Total Gate Charge	Q_g	$V_{DS}=-20V, V_{GS}=-10V, I_D=-30A$		29		nC
Gate-to-Source Charge	Q_{gs}			6.4		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			5.9		nC
Diode Forward Voltage	V_{SD}	$I_S=-30A, V_{GS}=0V$		-0.97	-1.5	V

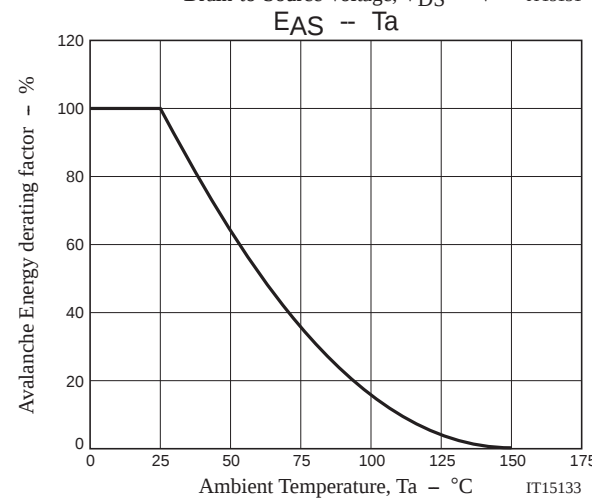
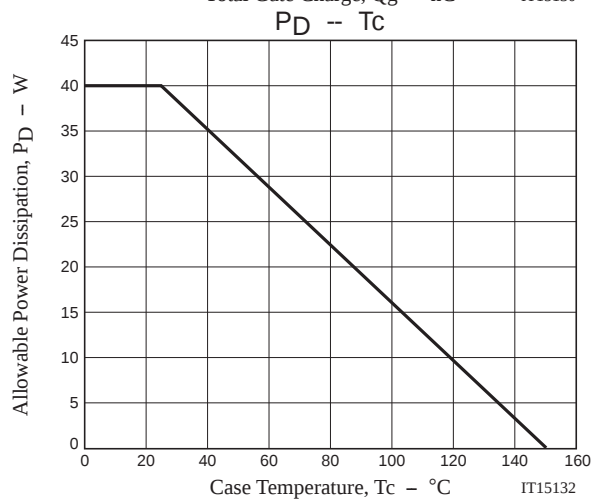
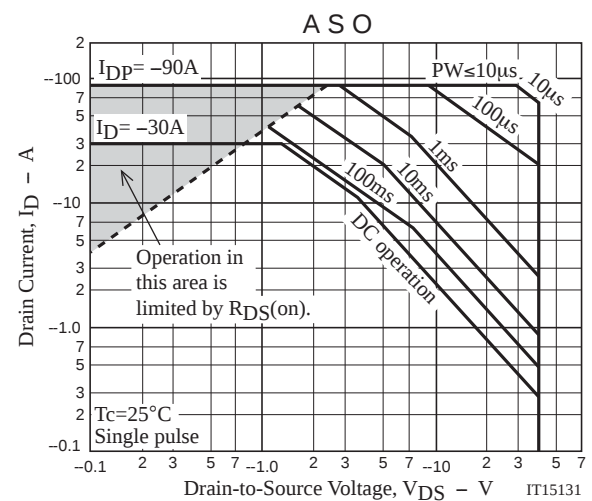
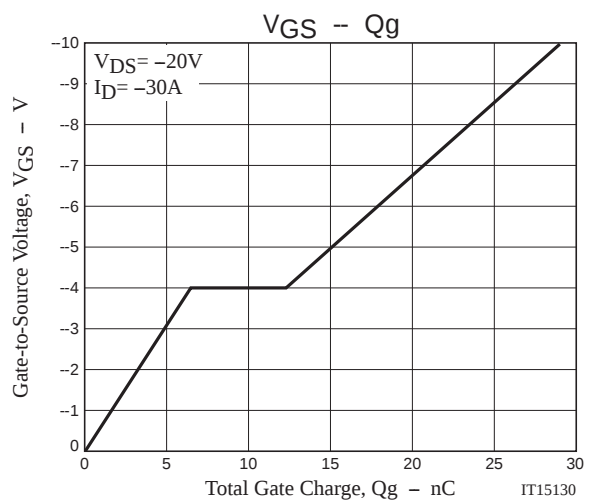
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
ATP106-TL-H	ATPAK	3,000pcs./reel	Pb Free and Halogen Free



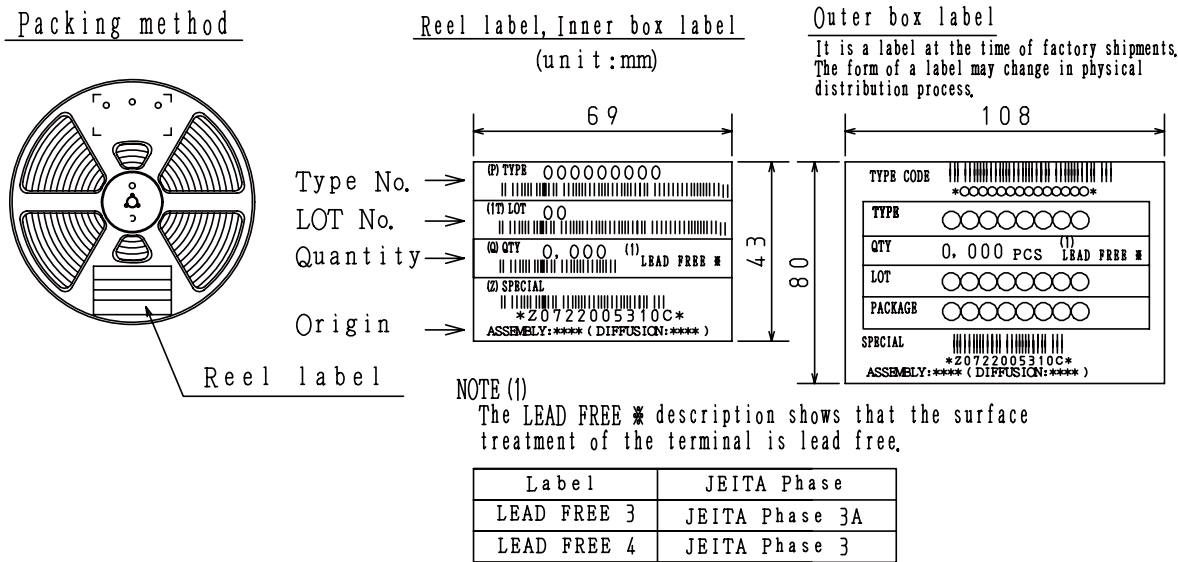


Taping Specification

ATP106-TL-H

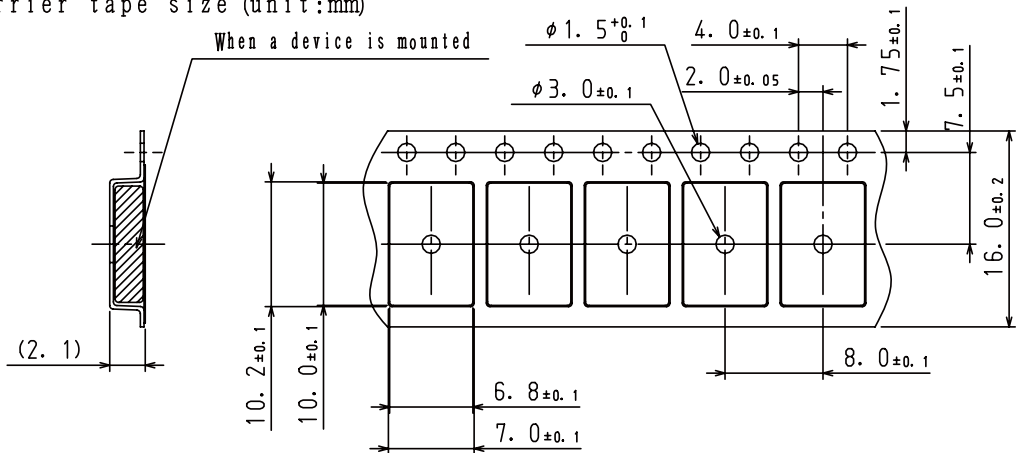
1. Packing Format (TL)

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

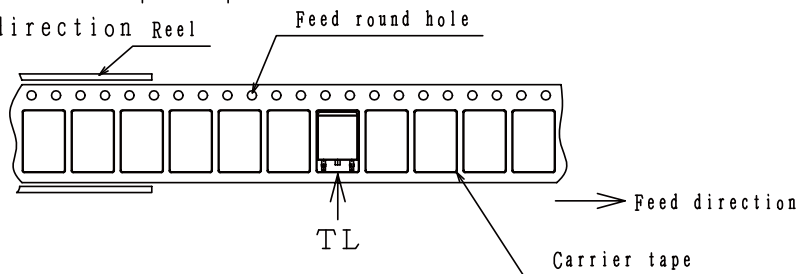


2. Taping configuration

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



2-2. Device placement direction Reel

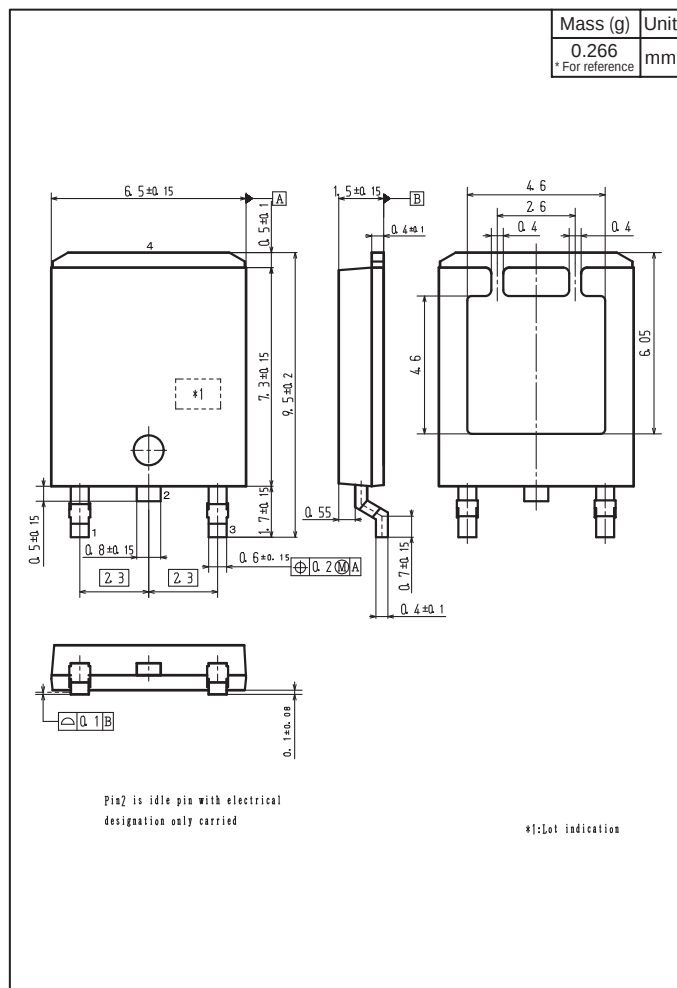


The one electrode terminals on feed hole side...TL

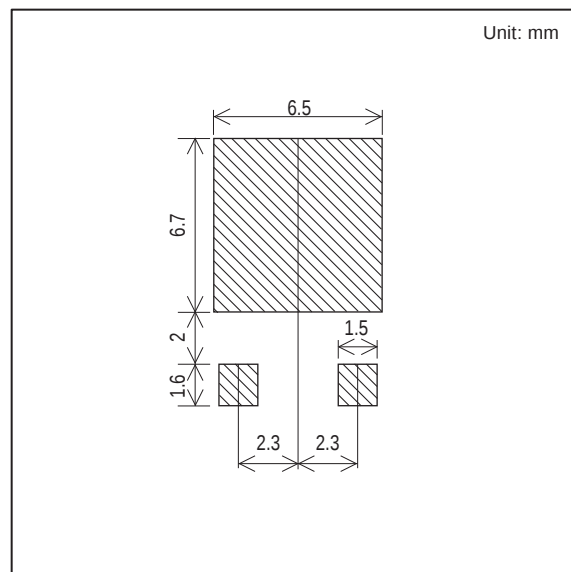
ATP106

Outline Drawing

ATP106-TL-H



Land Pattern Example



Note on usage : Since the ATP106 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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