



ATP602

N-Channel Power MOSFET 600V, 5A, 2.7Ω, ATPAK

ON Semiconductor®

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Features

- ON-resistance $R_{DS(on)}=2.1\Omega$ (typ.)
- 10V drive
- Input capacitance $C_{iss}=350\text{pF}$ (typ.)
- Halogen free compliance

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		600	V
Gate-to-Source Voltage	V_{GS}		± 30	V
Drain Current (DC)	I_D		5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	15	A
Allowable Power Dissipation	P_D	$T_c=25^\circ\text{C}$	70	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$
Avalanche Energy (Single Pulse) *1	E_{AS}		74	mJ
Avalanche Current *2	I_{AV}		5	A

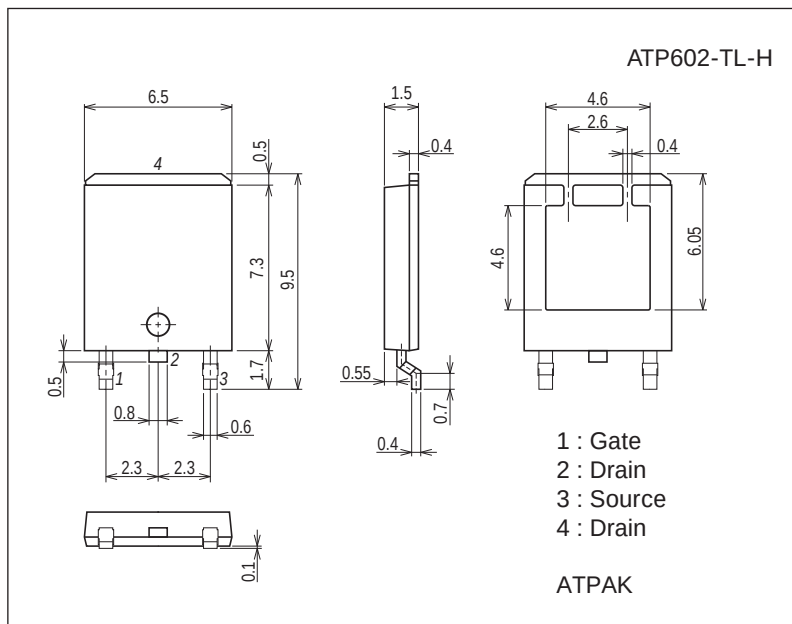
Note : *1 $V_{DD}=99\text{V}$, $L=5\text{mH}$, $I_{AV}=5\text{A}$ (Fig.1)*2 $L \leq 5\text{mH}$, Single pulse

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)

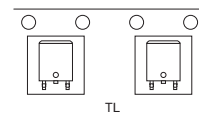
7057-001



Product & Package Information

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

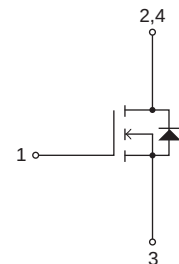
Packing Type: TL



Marking



Electrical Connection



ATP602

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=10mA, V_{GS}=0V$	600			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=480V, V_{GS}=0V$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0V$			± 100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	3		5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=2.5A$	1.5	2.9		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=2.5A, V_{GS}=10V$		2.1	2.7	Ω
Input Capacitance	C_{iss}	$V_{DS}=30V, f=1MHz$		350		pF
Output Capacitance	C_{oss}			68		pF
Reverse Transfer Capacitance	C_{rss}			15		pF
Turn-ON Delay Time	$t_{d(on)}$	See Fig.2		14.2		ns
Rise Time	t_r			37.4		ns
Turn-OFF Delay Time	$t_{d(off)}$			36.2		ns
Fall Time	t_f			20.4		ns
Total Gate Charge	Q_g	$V_{DS}=200V, V_{GS}=10V, I_D=5A$		13.6		nC
Gate-to-Source Charge	Q_{gs}			3.4		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			7.2		nC
Diode Forward Voltage	V_{SD}	$I_S=5A, V_{GS}=0V$		0.9	1.2	V

Fig.1 Avalanche Resistance Test Circuit

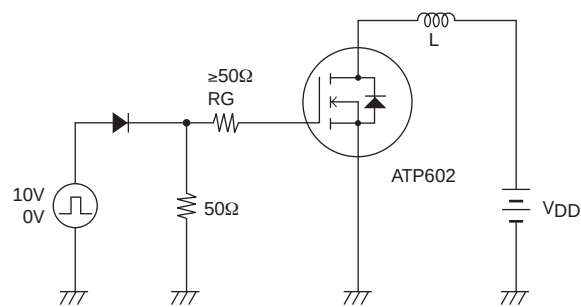
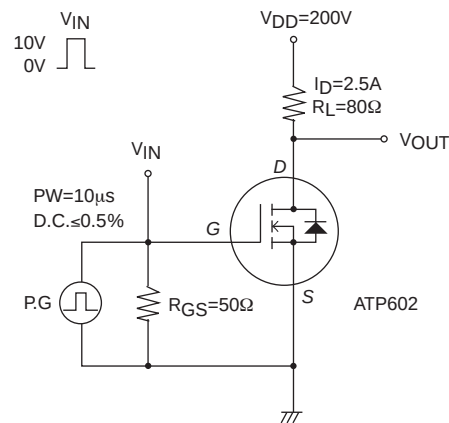
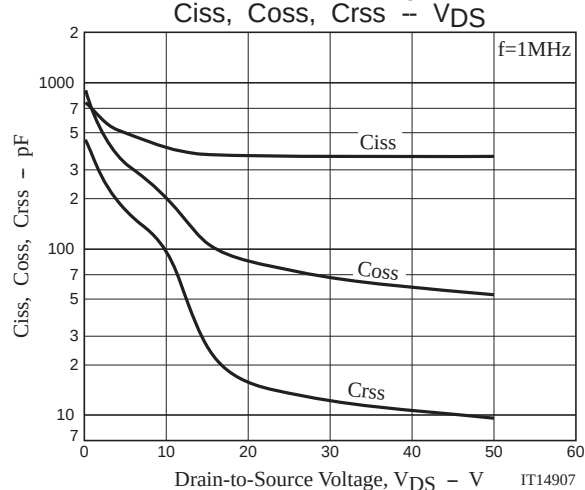
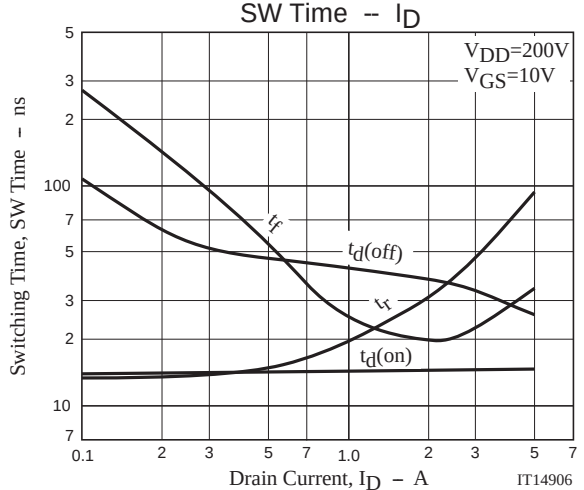
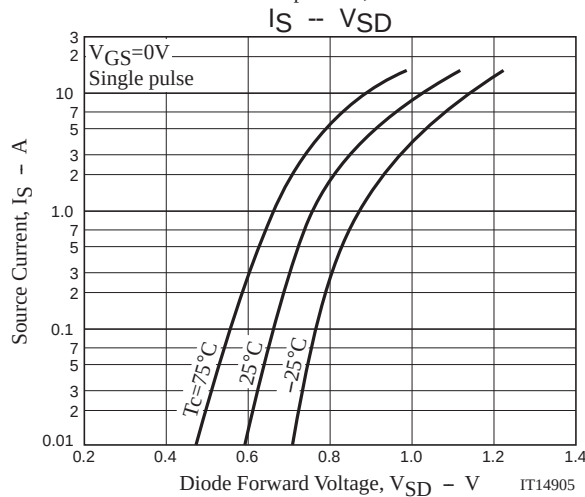
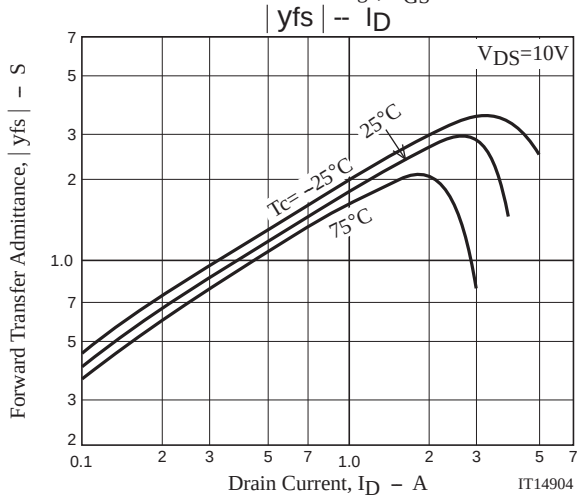
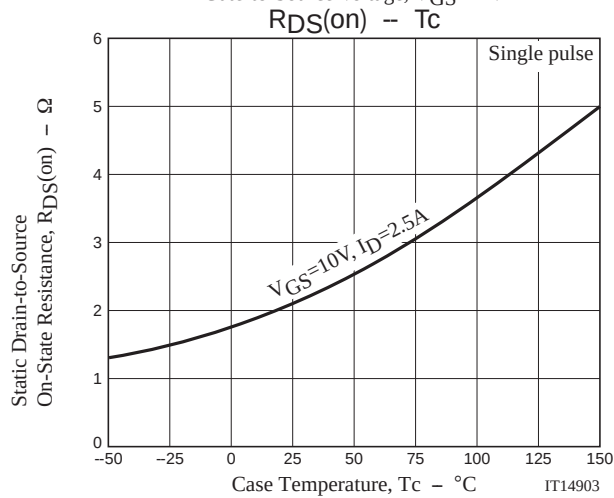
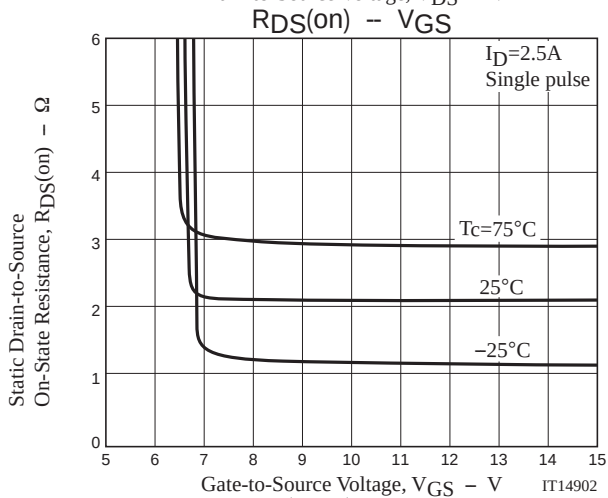
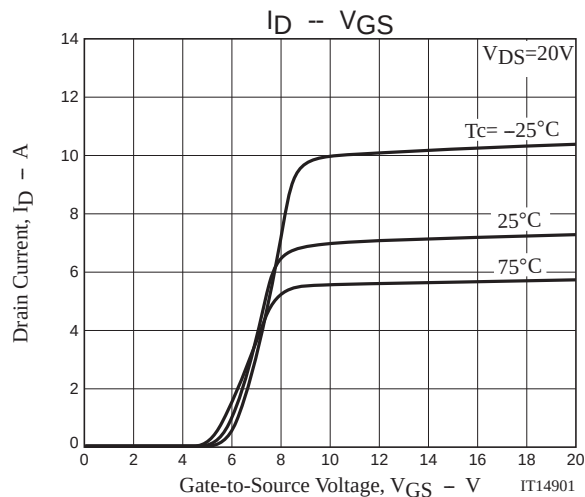
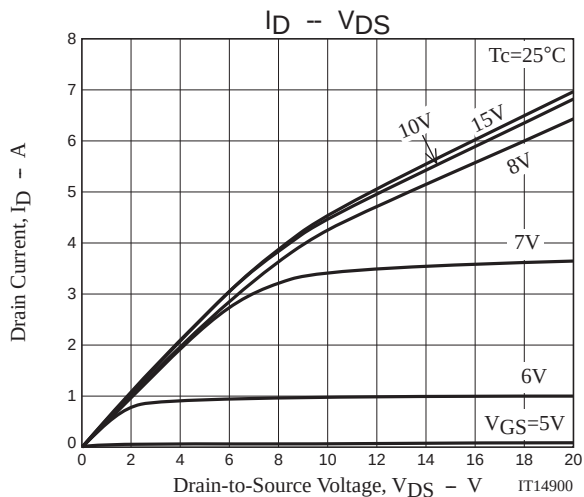


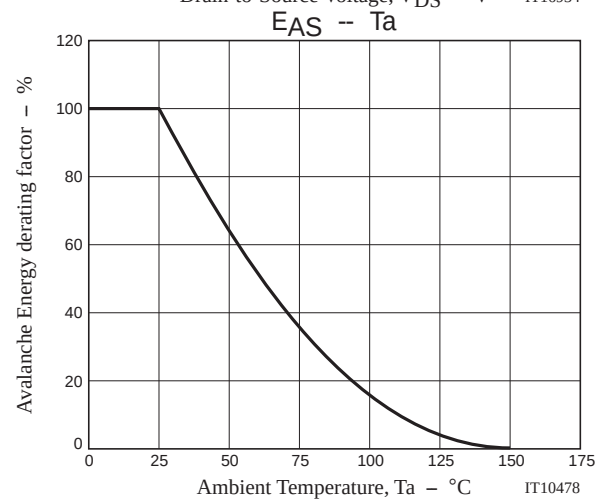
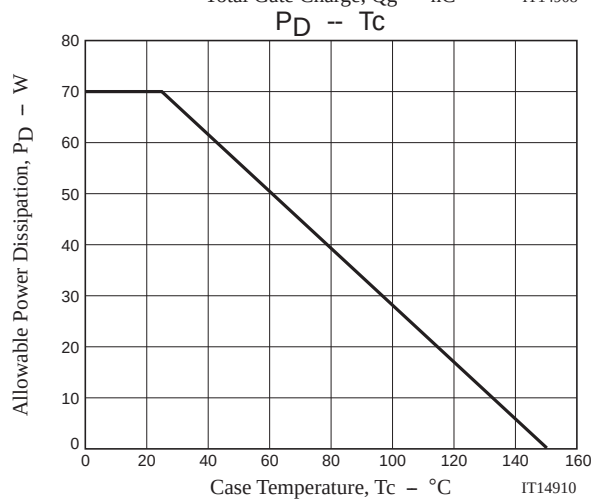
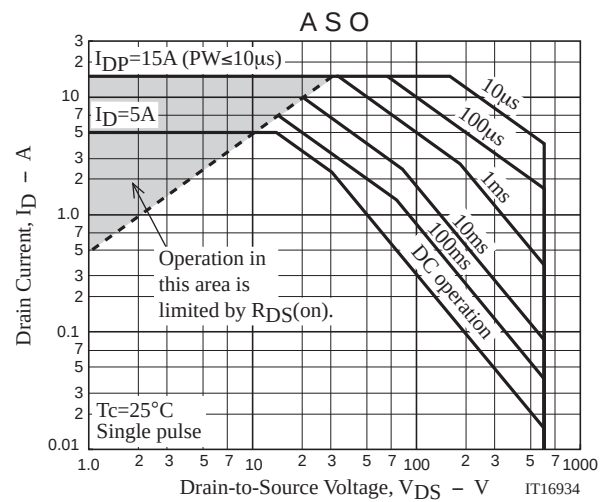
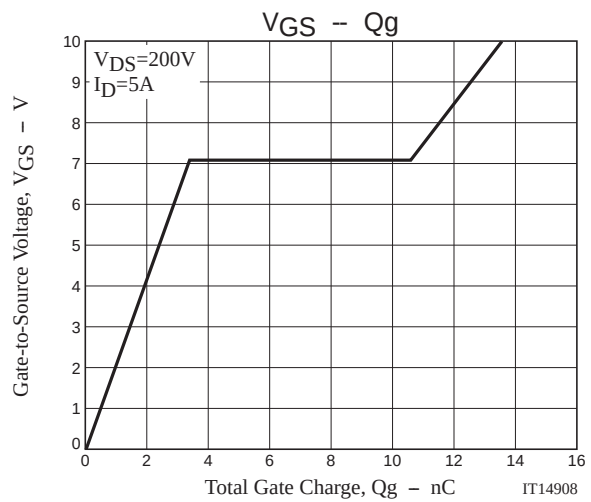
Fig.2 Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
ATP602-TL-H	ATPAK	3,000pcs./reel	Pb Free and Halogen Free



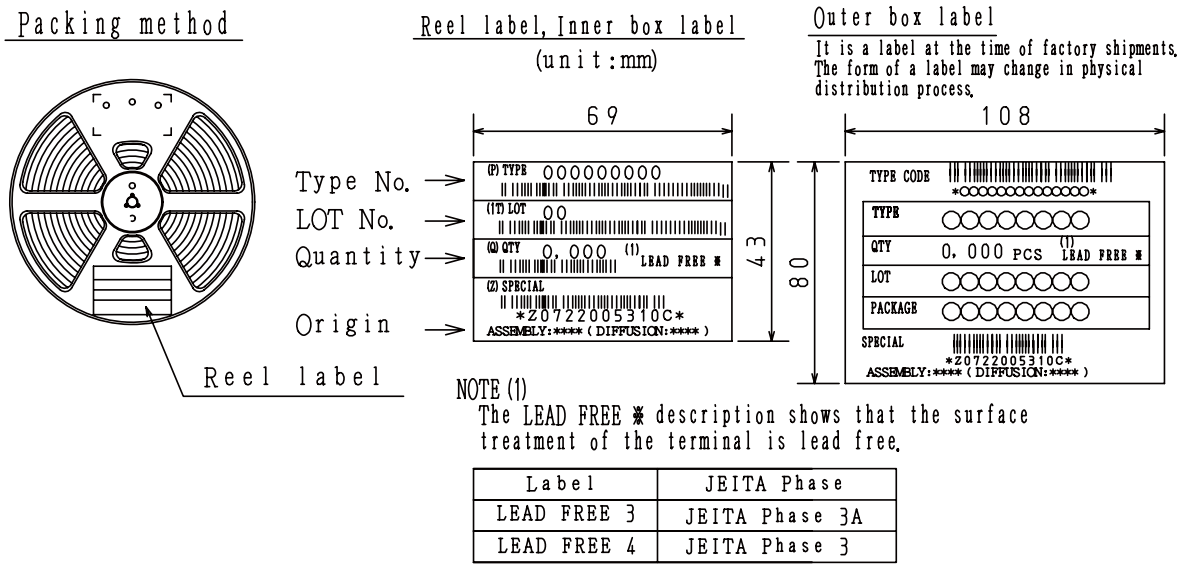


Taping Specification

ATP602-TL-H

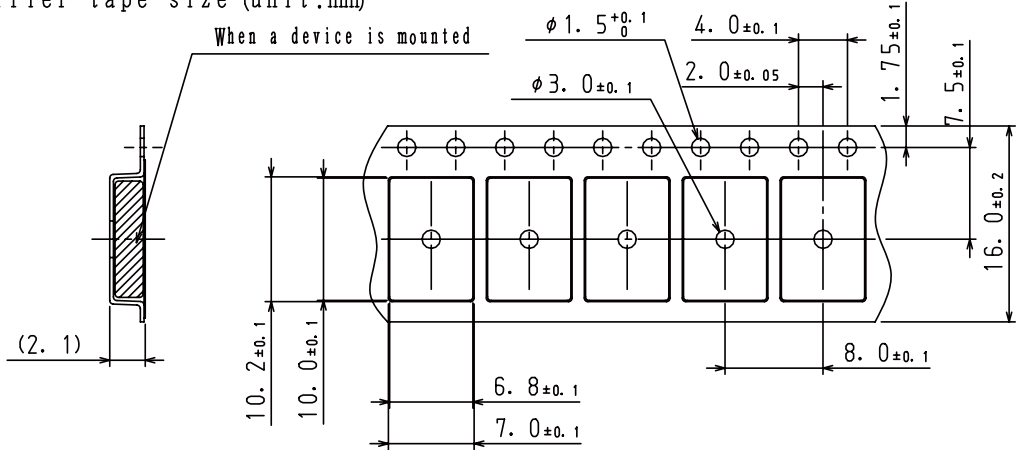
1. Packing Format (TL)

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

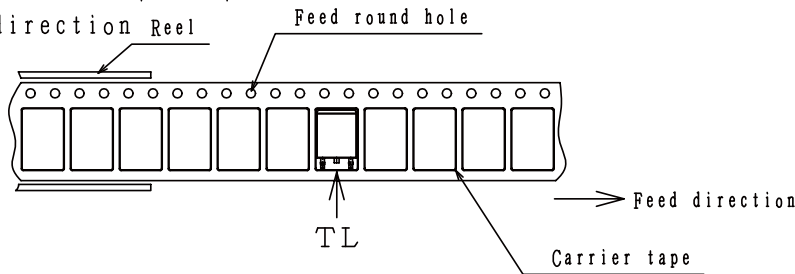


2. Taping configuration

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



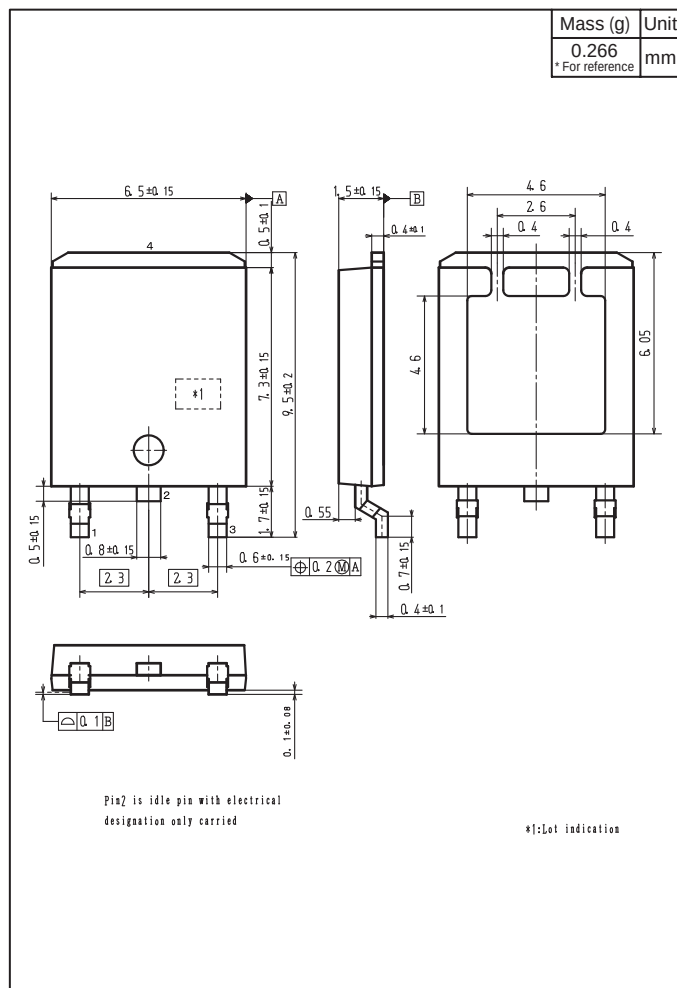
2-2. Device placement direction Reel



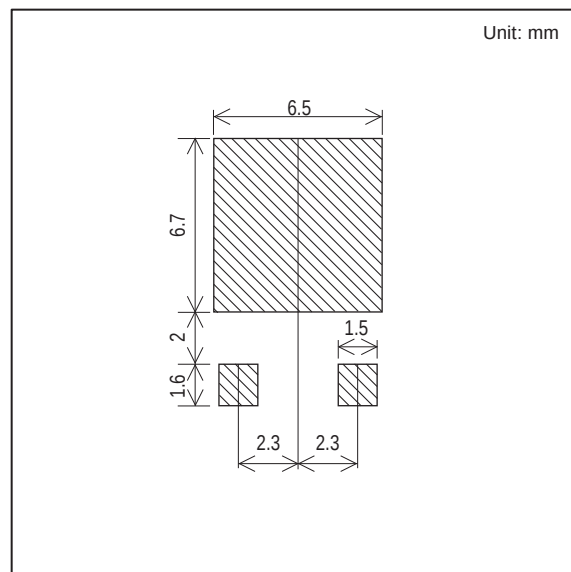
The one electrode terminals on feed hole side...TL

Outline Drawing

ATP602-TL-H



Land Pattern Example



Note on usage : Since the ATP602 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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