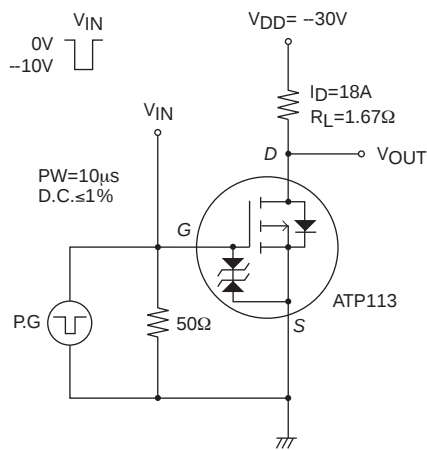


ATP113

Electrical Characteristics at Ta=25°C

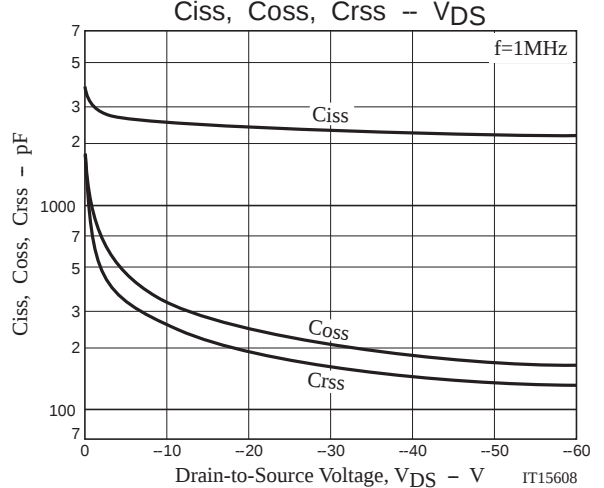
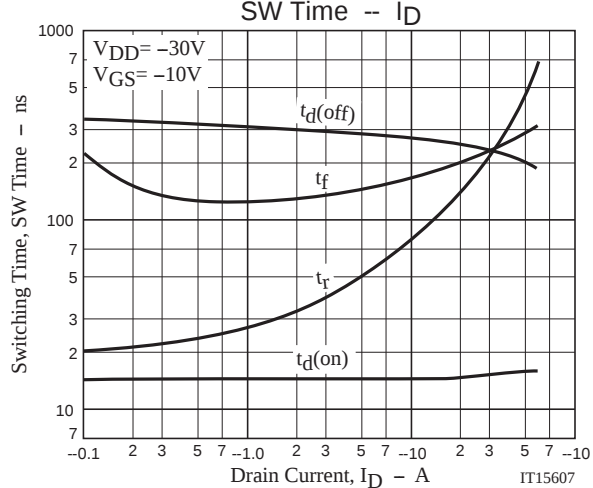
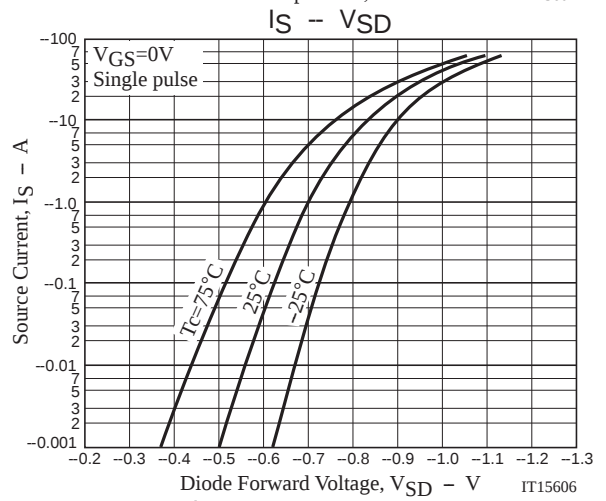
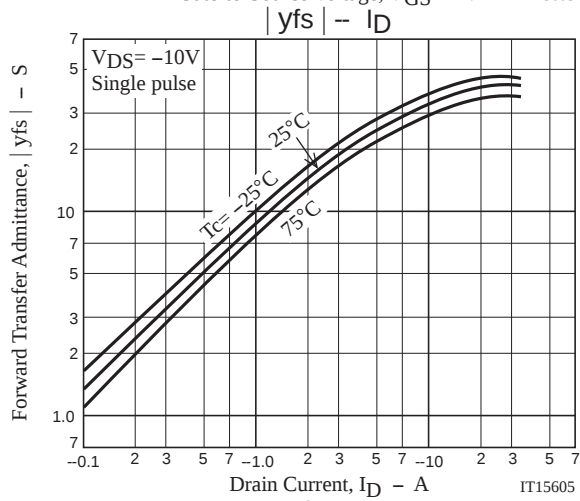
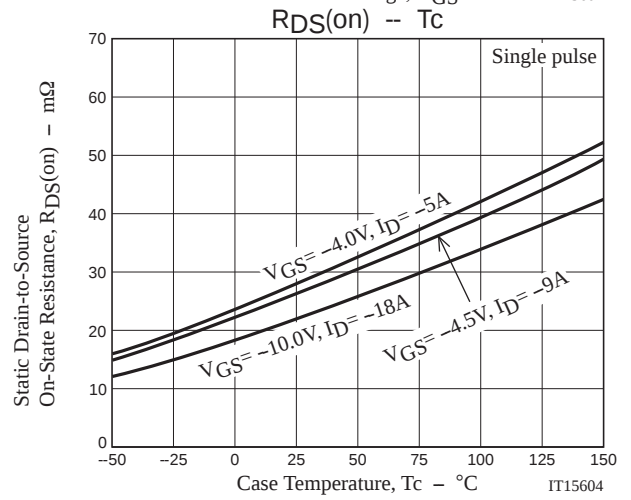
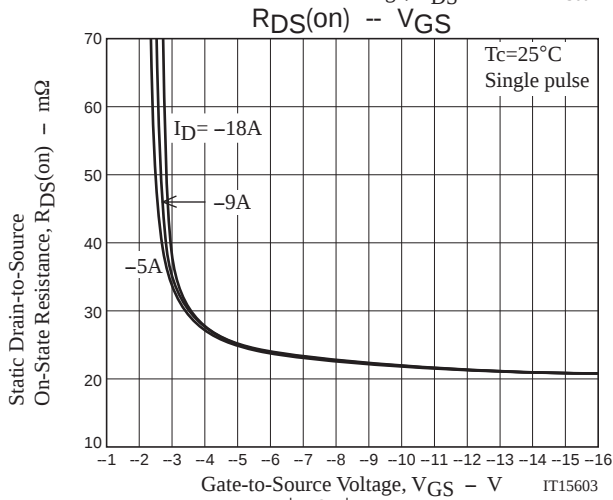
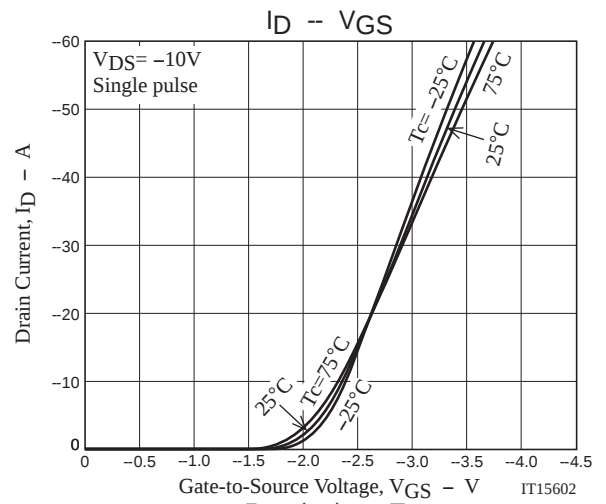
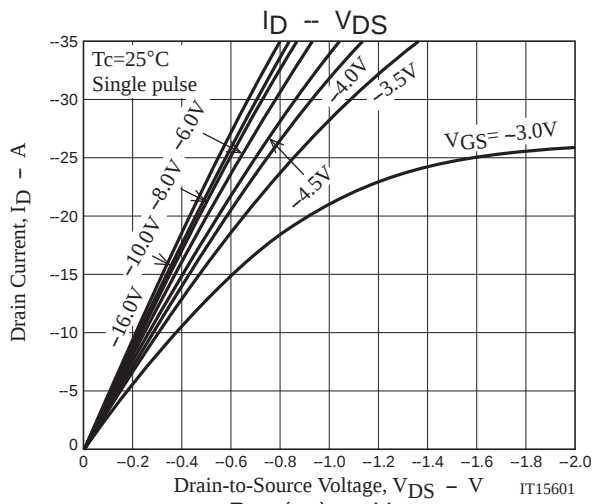
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1mA, V_{GS}=0V$	-60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V, V_{GS}=0V$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10V, I_D=-1mA$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-18A$		37		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-18A, V_{GS}=-10V$		22.5	29.5	$m\Omega$
	$R_{DS(on)2}$	$I_D=-9A, V_{GS}=-4.5V$		27	38	$m\Omega$
	$R_{DS(on)3}$	$I_D=-5A, V_{GS}=-4V$		29	44	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-20V, f=1MHz$		2400		pF
Output Capacitance	C_{oss}			250		pF
Reverse Transfer Capacitance	C_{rss}			195		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		15		ns
Rise Time	t_r			125		ns
Turn-OFF Delay Time	$t_{d(off)}$			250		ns
Fall Time	t_f			200		ns
Total Gate Charge	Q_g	$V_{DS}=-30V, V_{GS}=-10V, I_D=-35A$		55		nC
Gate-to-Source Charge	Q_{gs}			7.5		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			12		nC
Diode Forward Voltage	V_{SD}	$I_S=-35A, V_{GS}=0V$		-0.98	-1.5	V

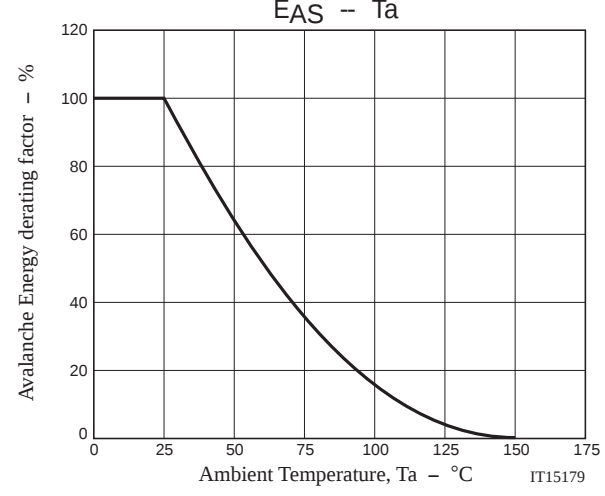
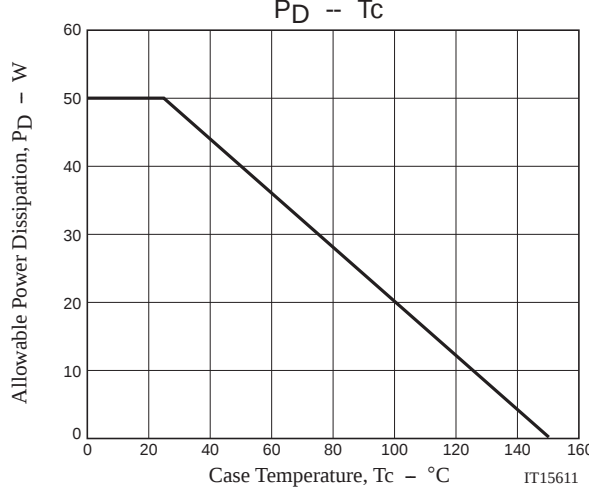
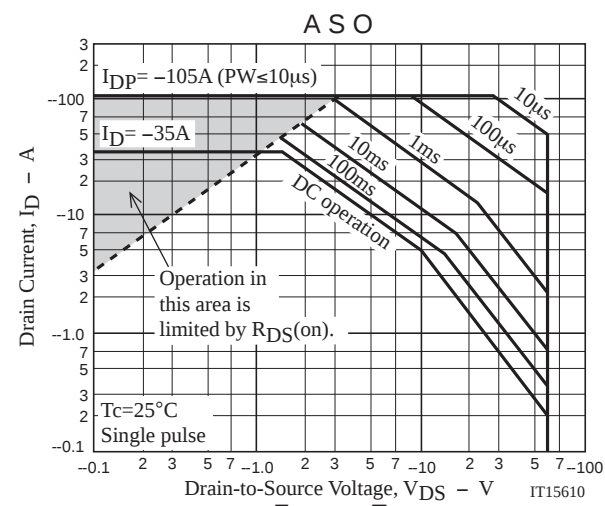
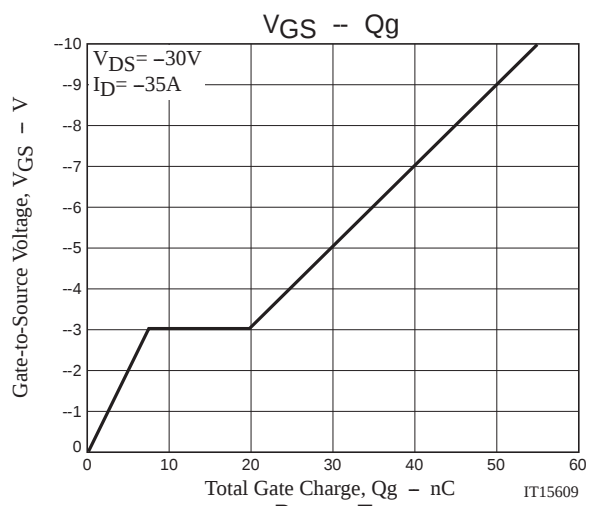
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
ATP113-TL-H	ATPAK	3,000pcs./reel	Pb Free and Halogen Free





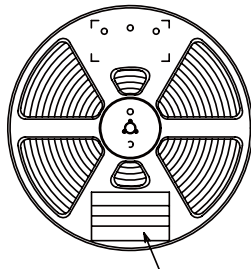
Taping Specification

ATP113-TL-H

1. Packing Format (TL)

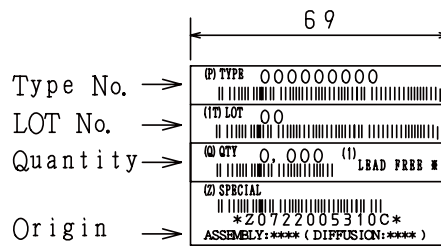
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	INNER BOX SD-C-18	OUTER BOX SD-A-18
ATPAK	ATP	3,000	3,000	15,000	1 reels contained Dimensions:mm (external) 340×340×28	5 inner boxes contained Dimensions:mm (external) 355×355×165

Packing method



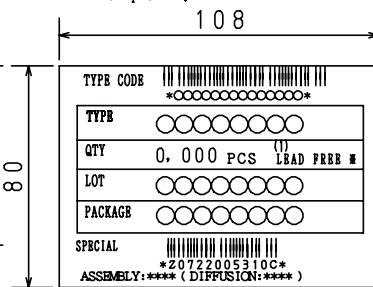
Reel label

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.



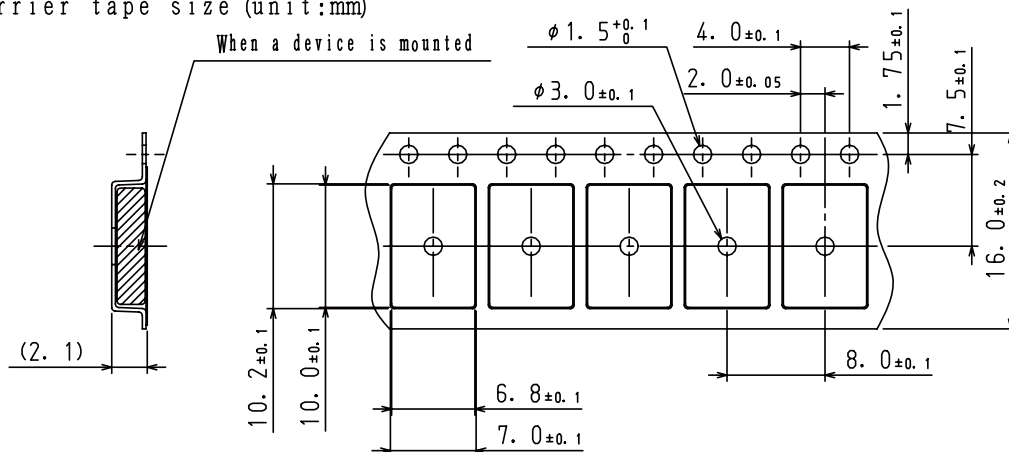
NOTE (1)

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

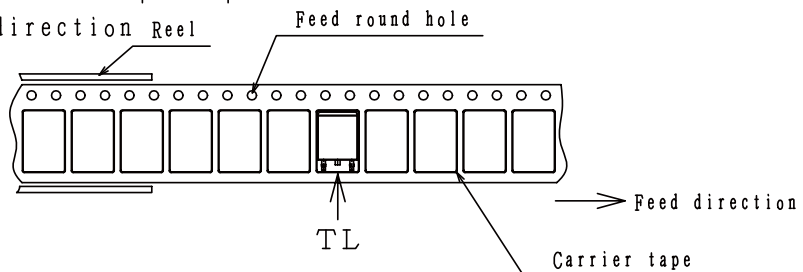
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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

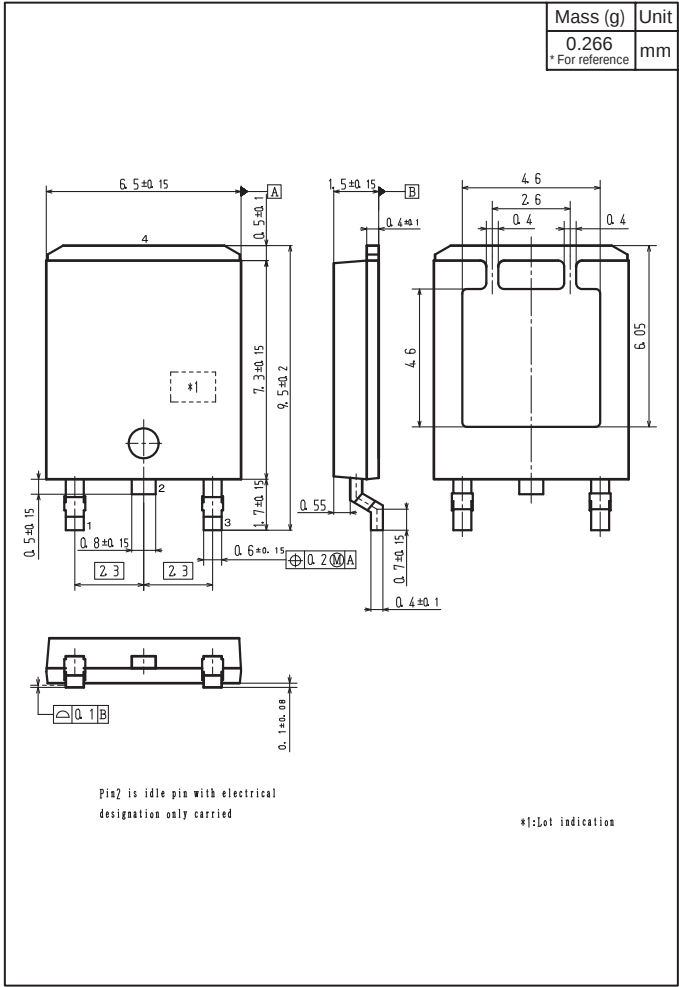


2-2. Device placement direction Reel

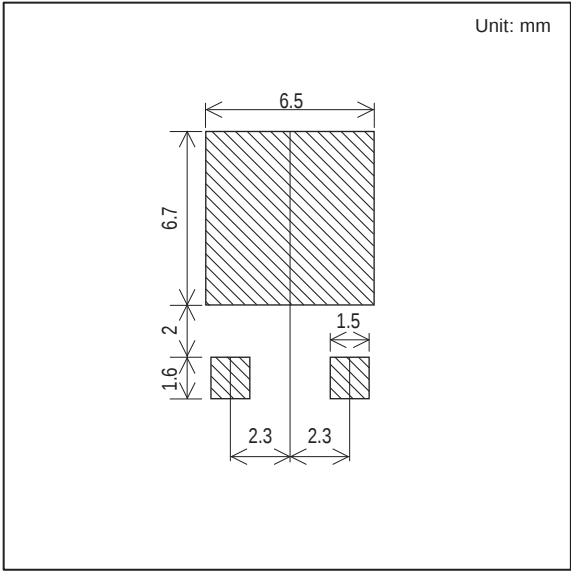


The one electrode terminals on feed hole side...TL

Outline Drawing
ATP113-TL-H



Land Pattern Example



Note on usage : Since the ATP113 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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