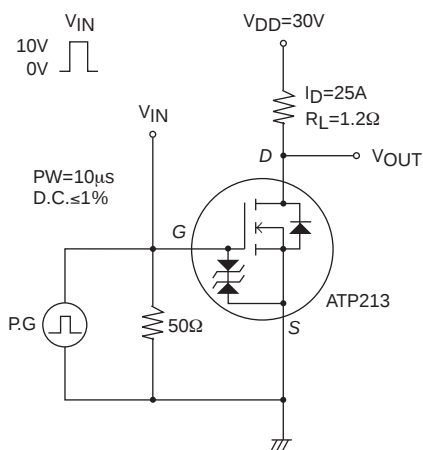


ATP213

Electrical Characteristics at Ta=25°C

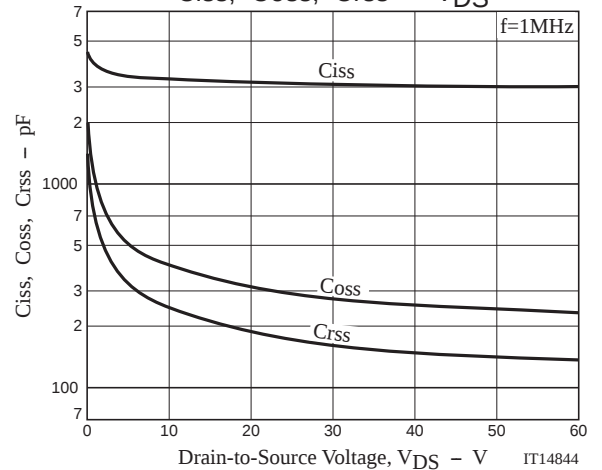
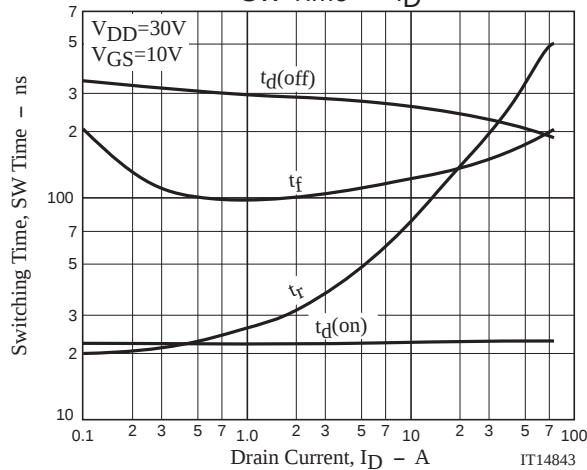
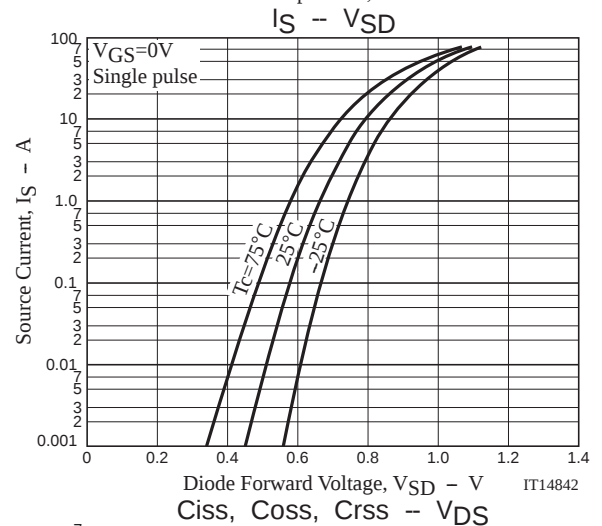
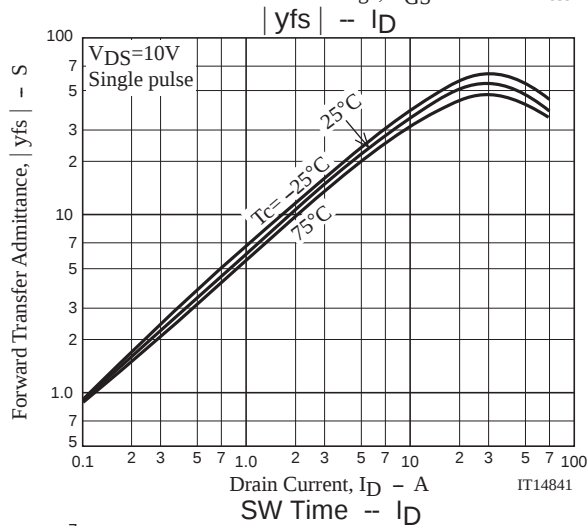
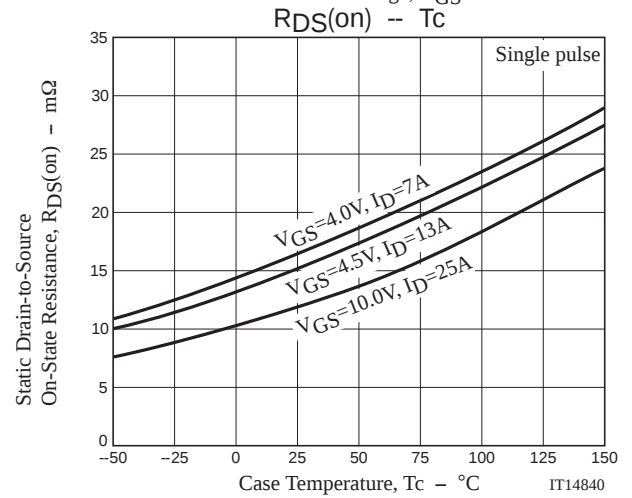
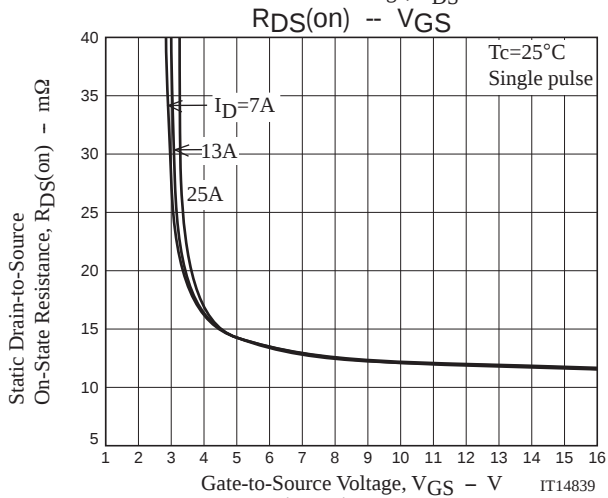
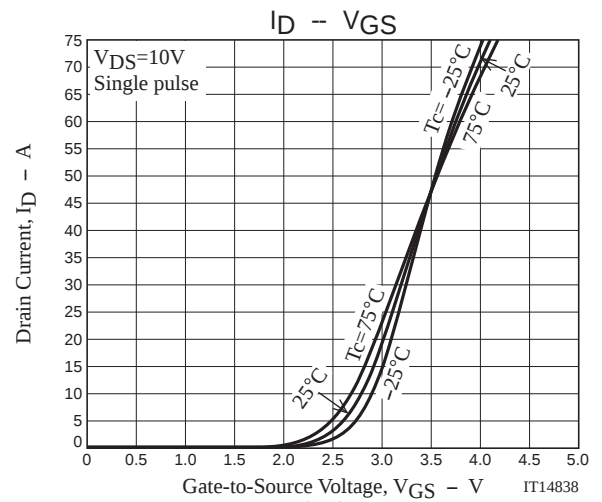
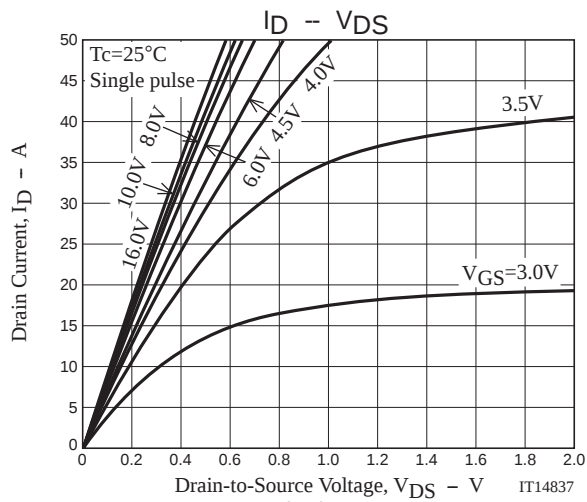
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=25A$		55		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=25A, V_{GS}=10V$		12	16	$m\Omega$
	$R_{DS(on)2}$	$I_D=13A, V_{GS}=4.5V$		15	21	$m\Omega$
	$R_{DS(on)3}$	$I_D=7A, V_{GS}=4V$		17	26	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		3150		pF
Output Capacitance	C_{oss}			310		pF
Reverse Transfer Capacitance	C_{rss}			190		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		23		ns
Rise Time	t_r			170		ns
Turn-OFF Delay Time	$t_{d(off)}$			230		ns
Fall Time	t_f			150		ns
Total Gate Charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_D=50A$		58		nC
Gate-to-Source Charge	Q_{gs}			10.5		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			12.5		nC
Diode Forward Voltage	V_{SD}	$I_S=50A, V_{GS}=0V$		1.01	1.2	V

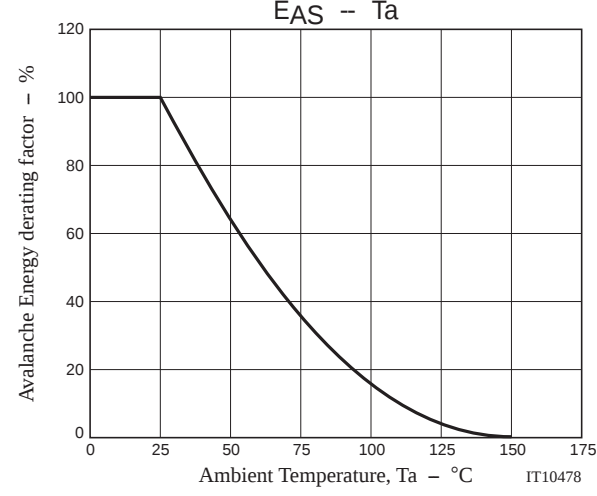
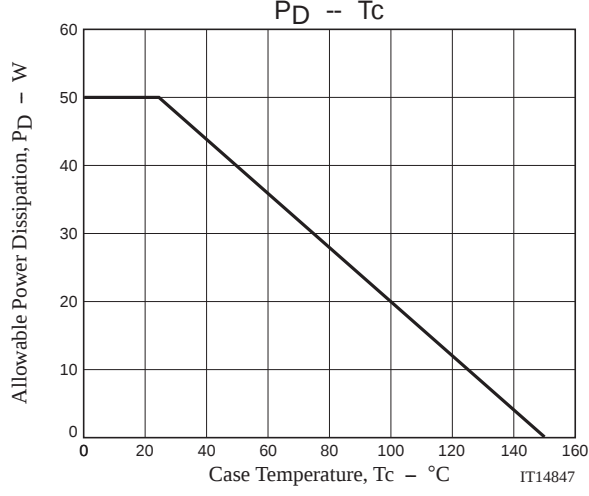
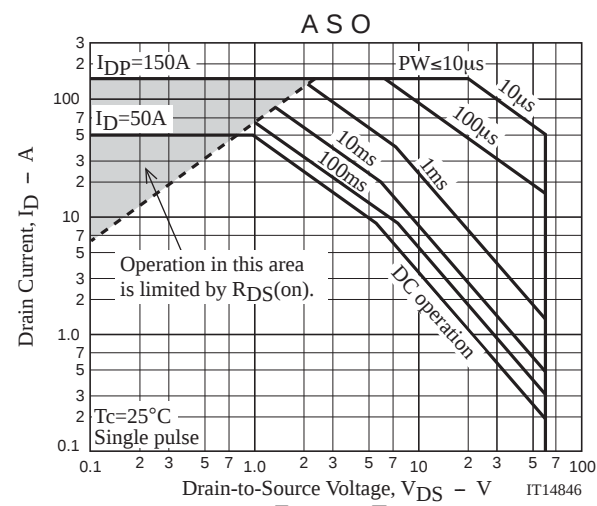
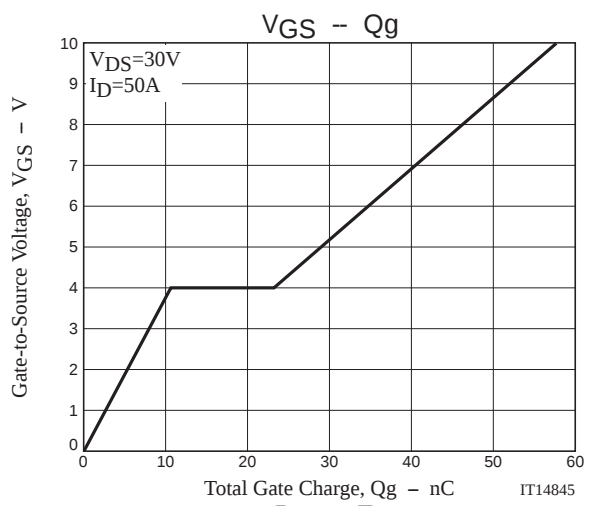
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
ATP213-TL-H	ATPAK	3,000pcs./reel	Pb Free and Halogen Free





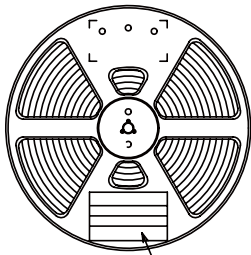
Taping Specification

ATP213-TL-H

1. Packing Format (TL)

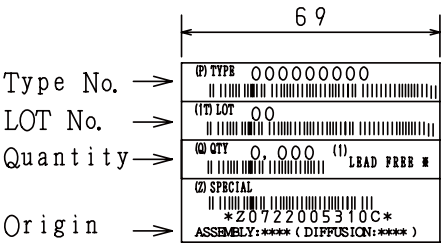
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	INNER BOX SD-C-18	OUTER BOX SD-A-18
ATPAK	ATP	3,000	3,000	15,000	1 reels contained Dimensions:mm (external) 340×340×28	5 inner boxes contained Dimensions:mm (external) 355×355×165

Packing method



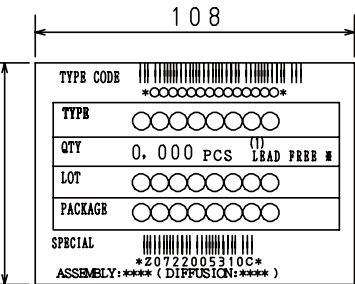
Reel label

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.

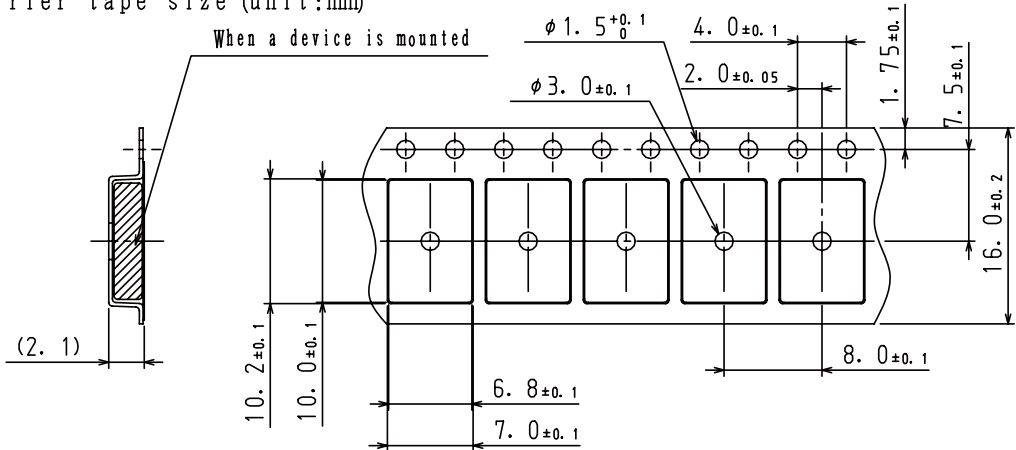


NOTE (1)
The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

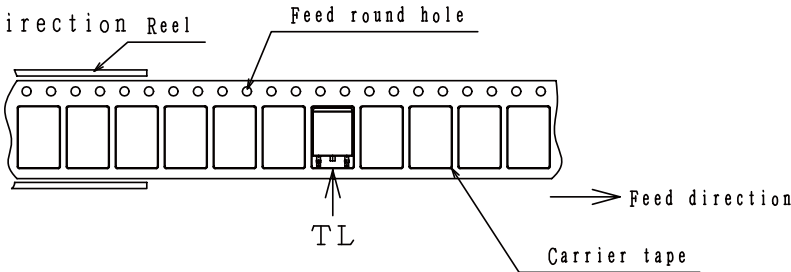
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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

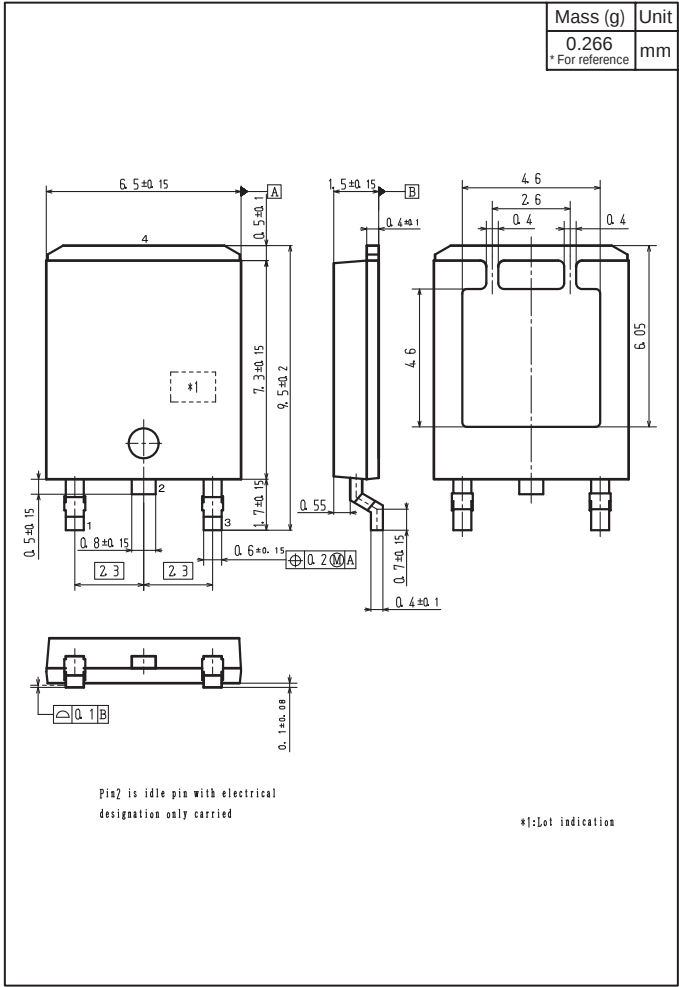


2-2. Device placement direction Reel

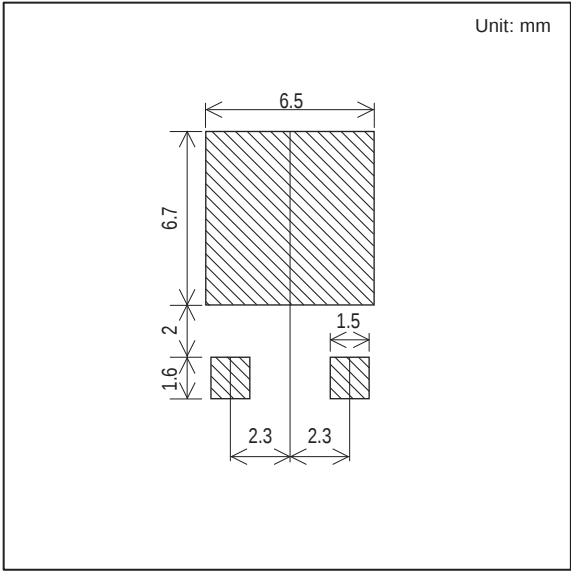


The one electrode terminals on feed hole side...TL

Outline Drawing
ATP213-TL-H



Land Pattern Example



Note on usage : Since the ATP213 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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