



N-Channel Silicon MOSFET

# ATP214 — General-Purpose Switching Device Applications

## Features

- ON-resistance  $R_{DS(on)1}=6.2m\Omega$ (typ.)
- 4V drive
- Protection diode in
- Input Capacitance  $C_{iss}=4850pF$ (typ.)
- Halogen free compliance

## Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		60	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		75	A
Drain Current ( $PW \leq 10\mu s$ )	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	225	A
Allowable Power Dissipation	$P_D$	$T_c=25^\circ C$	60	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$
Avalanche Energy (Single Pulse) *1	$E_{AS}$		94	mJ
Avalanche Current *2	$I_{AV}$		38	A

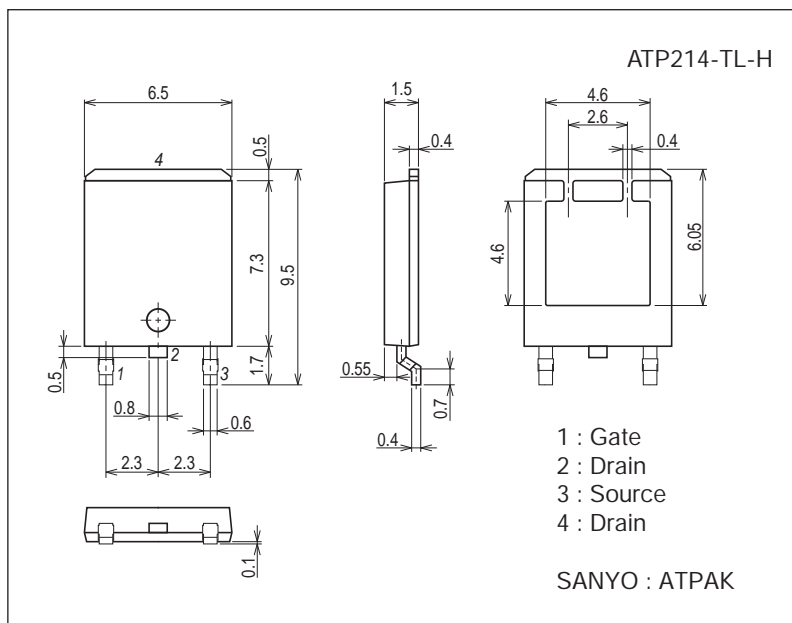
Note : \*1  $V_{DD}=15V$ ,  $L=100\mu H$ ,  $I_{AV}=38A$

\*2  $L \leq 100\mu H$ , Single pulse

## Package Dimensions

unit : mm (typ)

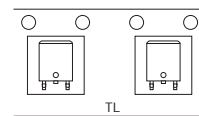
7057-001



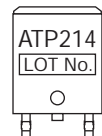
## Product & Package Information

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

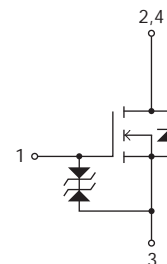
## Packing Type: TL



## Marking



## Electrical Connection

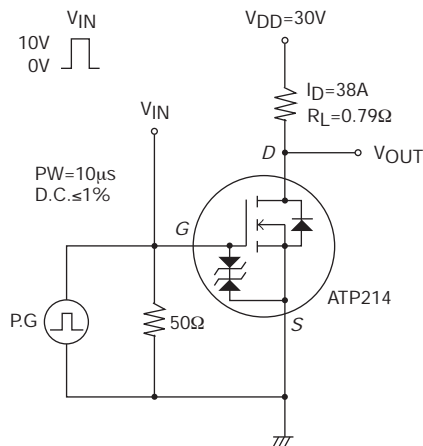


# ATP214

## Electrical Characteristics at Ta=25°C

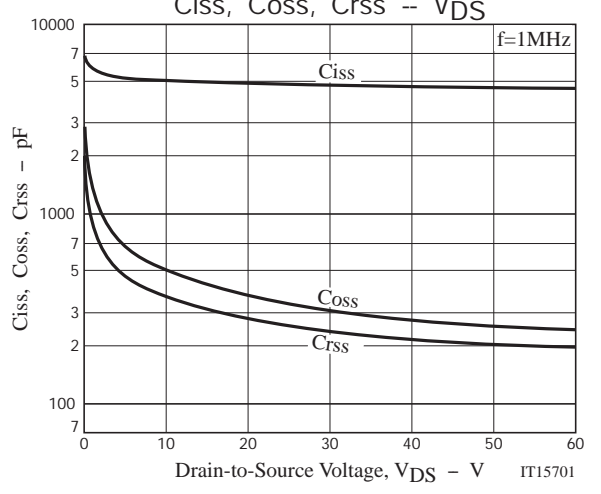
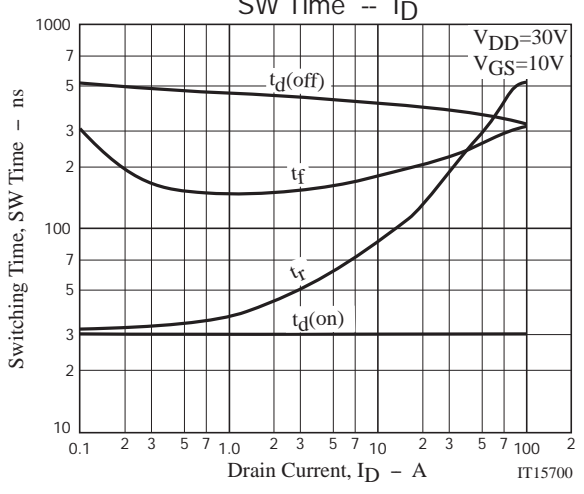
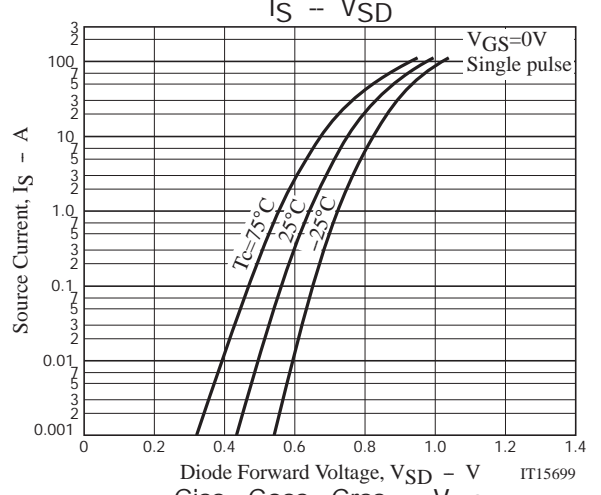
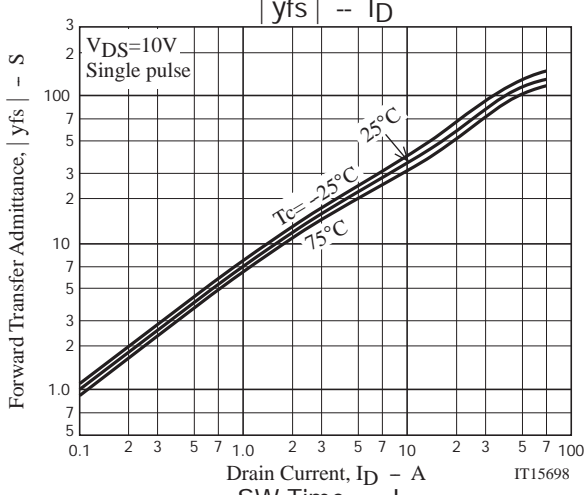
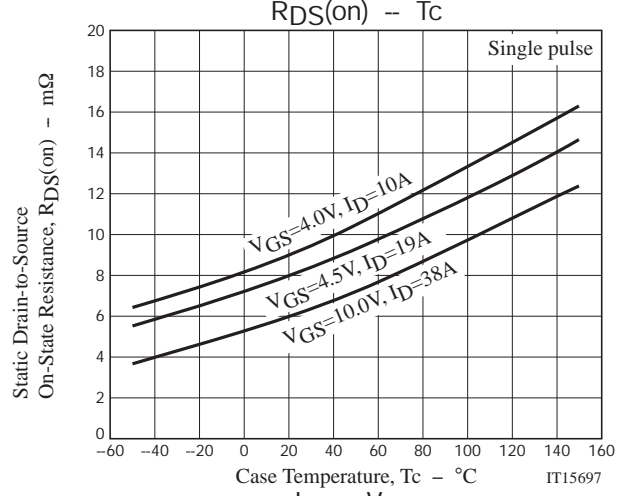
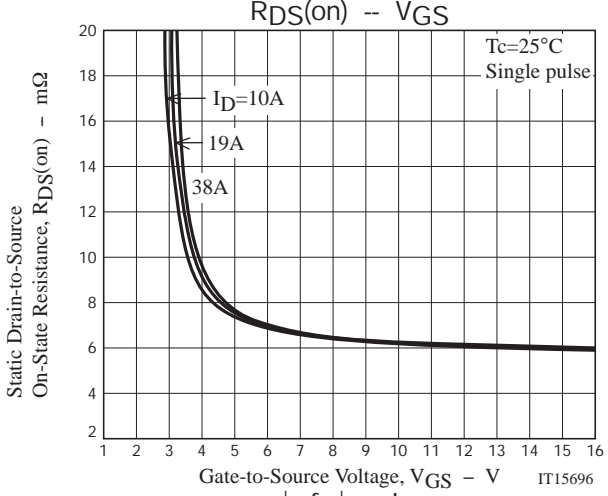
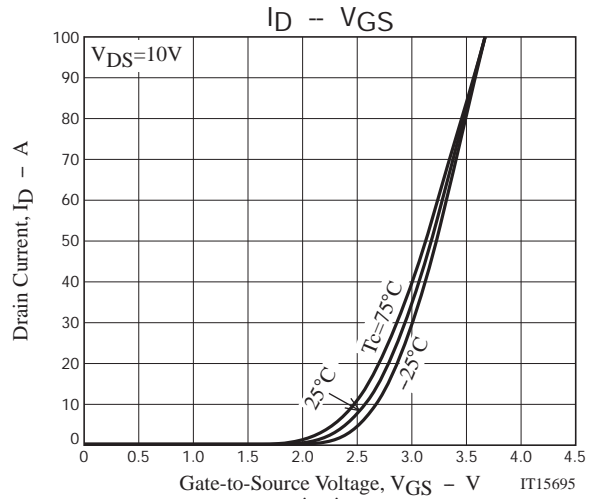
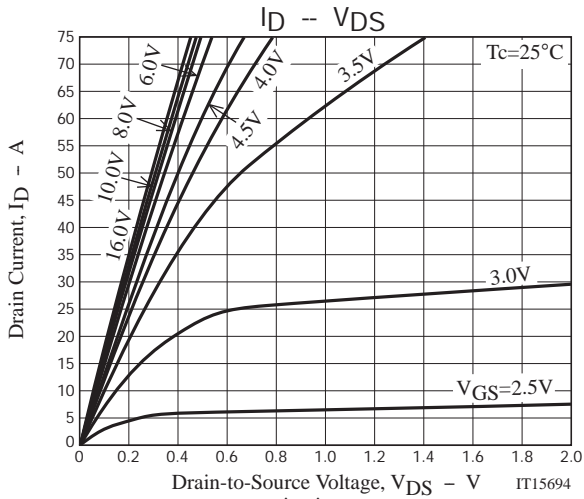
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V	60			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.2		2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =38A		100		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =38A, V <sub>GS</sub> =10V		6.2	8.1	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =19A, V <sub>GS</sub> =4.5V		8.2	11.5	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =10A, V <sub>GS</sub> =4V		9.2	14	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =20V, f=1MHz		4850		pF
Output Capacitance	C <sub>oss</sub>			370		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			280		pF
Turn-ON Delay Time	t <sub>d(on)</sub>		See specified Test Circuit.		30	
Rise Time	t <sub>r</sub>			240		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>			360		ns
Fall Time	t <sub>f</sub>			250		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =10V, I <sub>D</sub> =75A			96	
Gate-to-Source Charge	Q <sub>gs</sub>			18.5		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>			18		nC
Diode Forward Voltage	V <sub>SD</sub>		I <sub>S</sub> =75A, V <sub>GS</sub> =0V		0.93	1.2

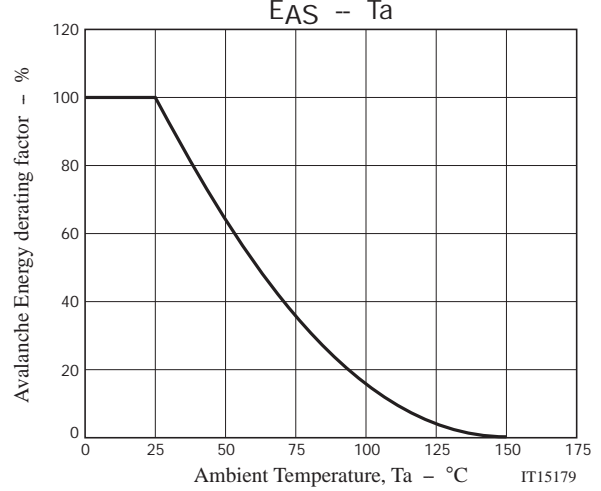
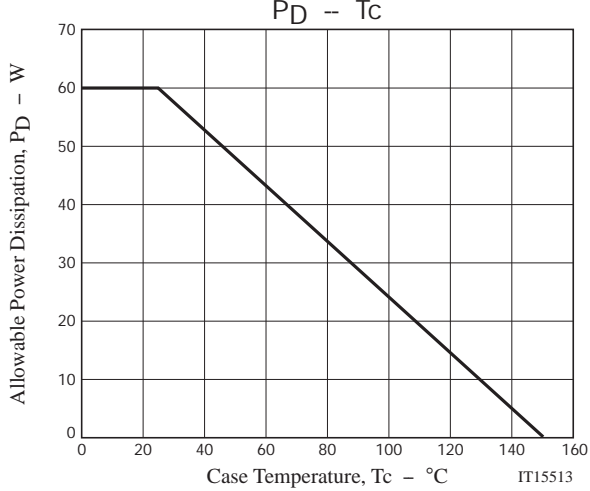
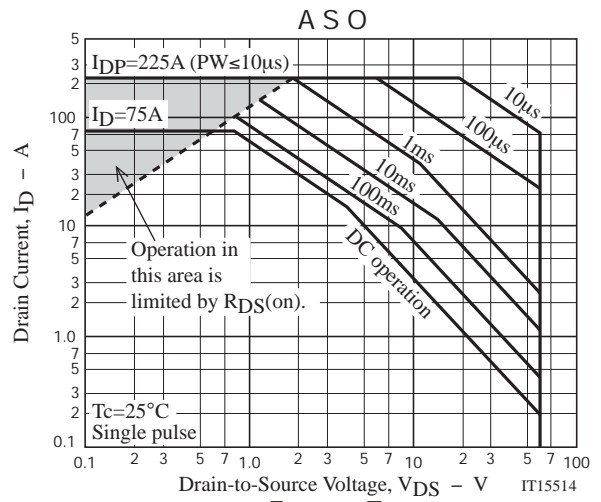
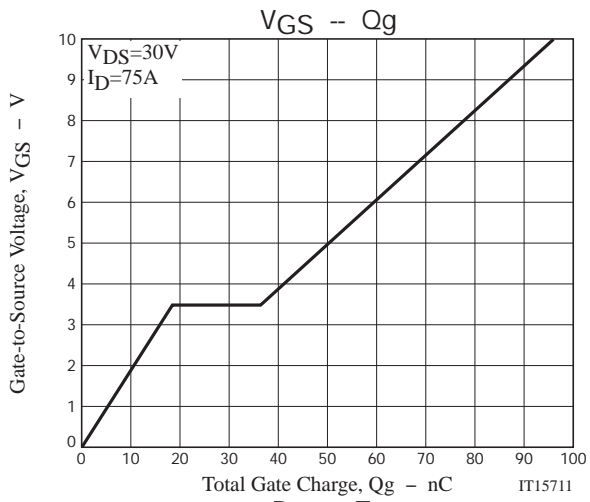
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
ATP214-TL-H	ATPAK	3,000pcs./reel	Pb Free and Halogen Free





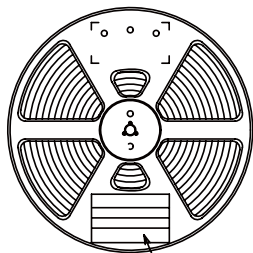
Taping Specification

ATP214-TL-H

1. Packing Format (TL)

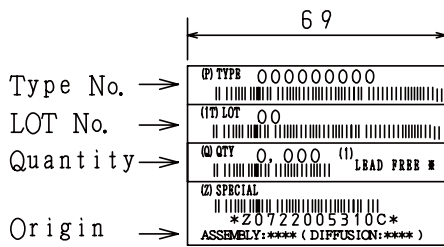
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	INNER BOX SD-C-18	OUTER BOX SD-A-18
ATPAK	ATP	3,000	3,000	15,000	1 reels contained Dimensions:mm (external) 340×340×28	5 inner boxes contained Dimensions:mm (external) 355×355×165

Packing method



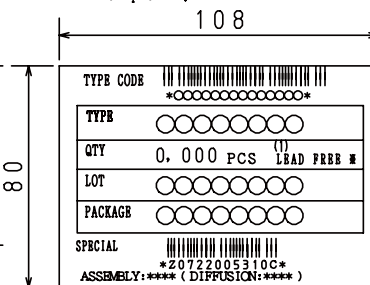
Reel label

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.



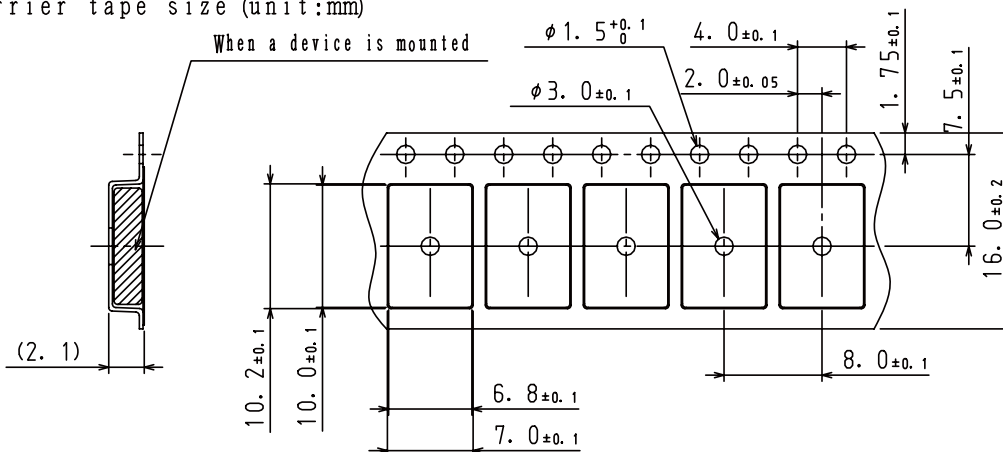
NOTE (1)

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

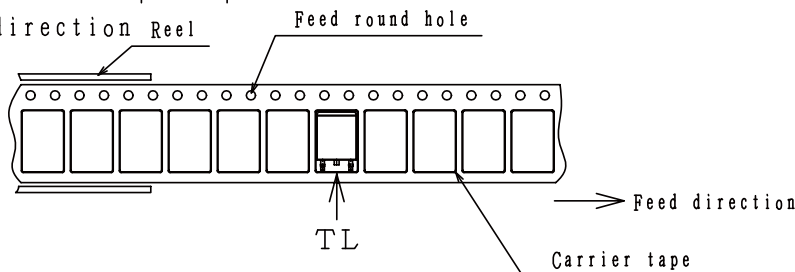
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

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

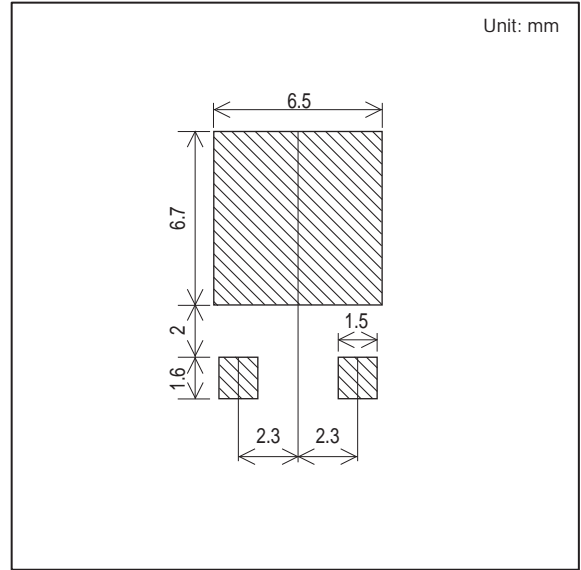
# ATP214

## Outline Drawing

ATP214-TL-H



## Land Pattern Example



Note on usage : Since the ATP214 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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