



ATP114 — General-Purpose Switching Device Applications

P-Channel Silicon MOSFET

Features

- ON-resistance $R_{DS(on)1}=12m\Omega$ (typ.)
- 4V drive
- Protection diode in
- Input Capacitance $C_{iss}=4000pF$ (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}		± 20	V
Drain Current (DC)	I_D		-55	A
Drain Current ($PW \leq 10\mu s$)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-165	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}		100	mJ
Avalanche Current *2	I_{AV}		-28	A

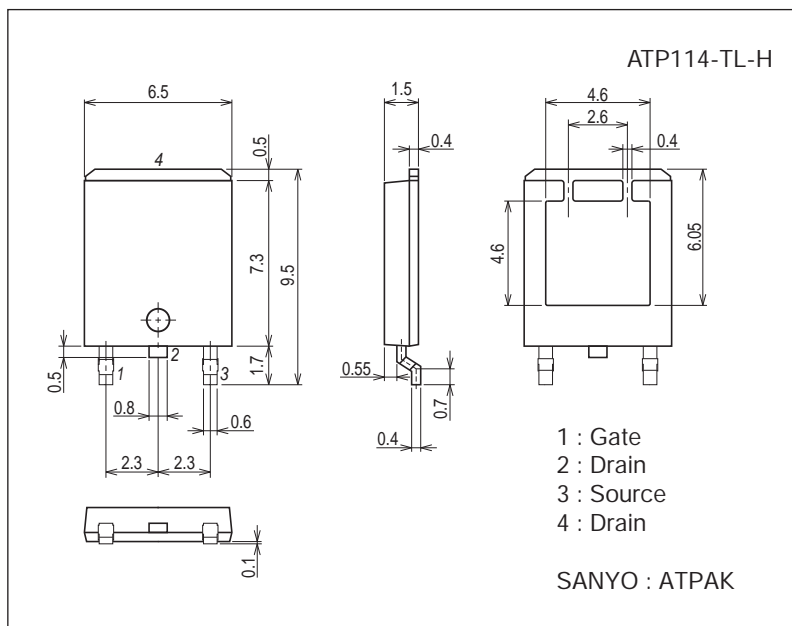
Note : *1 $V_{DD}=-15V$, $L=200\mu H$, $I_{AV}=-28A$

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

Package Dimensions

unit : mm (typ)

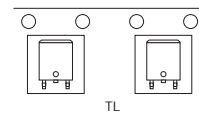
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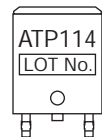
Product & Package Information

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

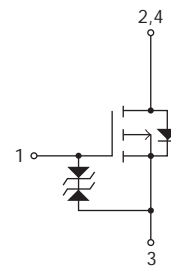
Packing Type: TL



Marking



Electrical Connection

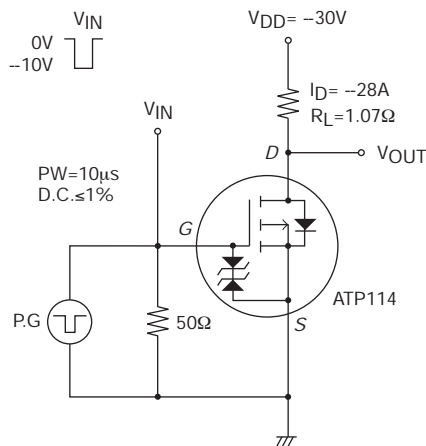


ATP114

Electrical Characteristics at Ta=25°C

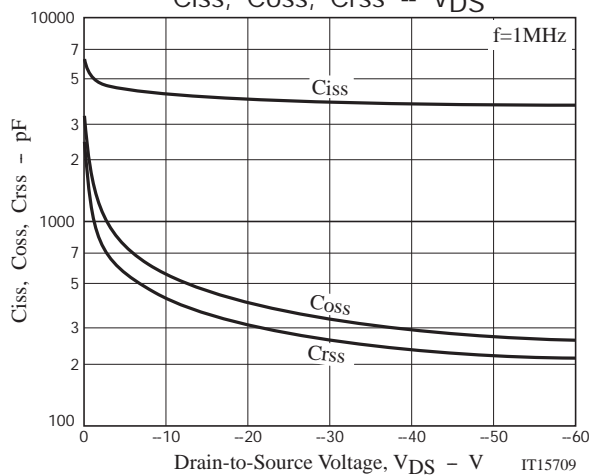
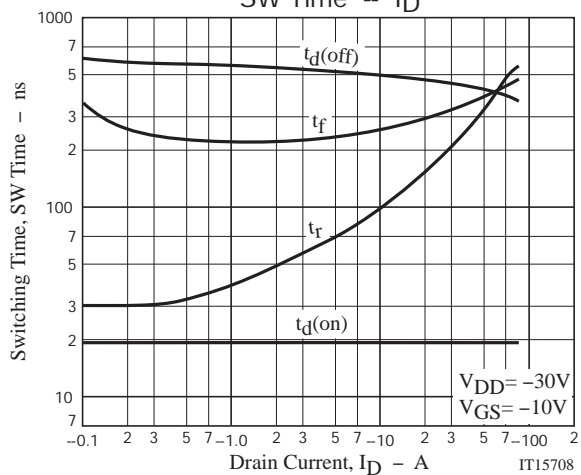
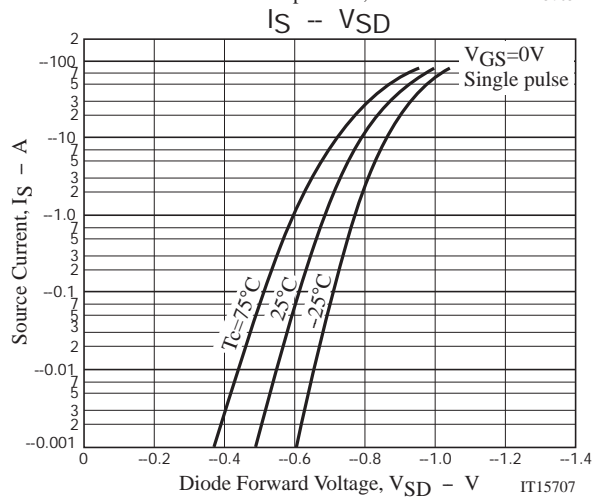
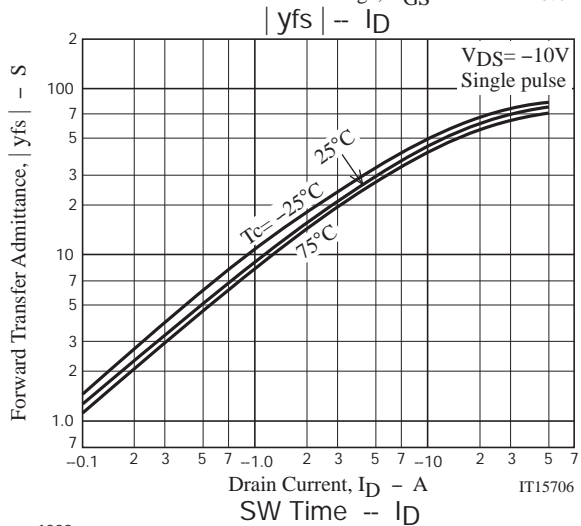
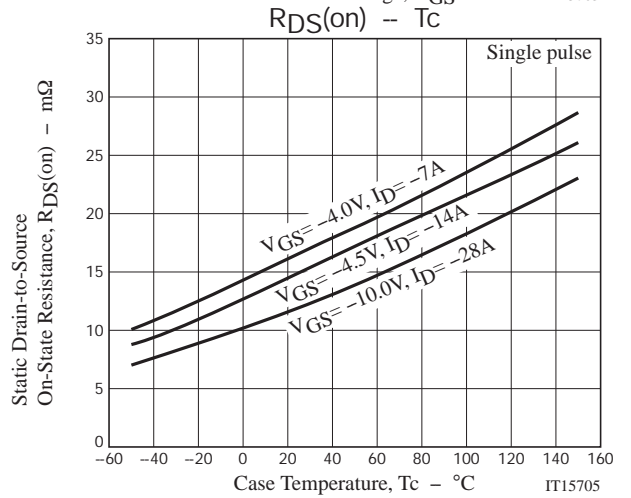
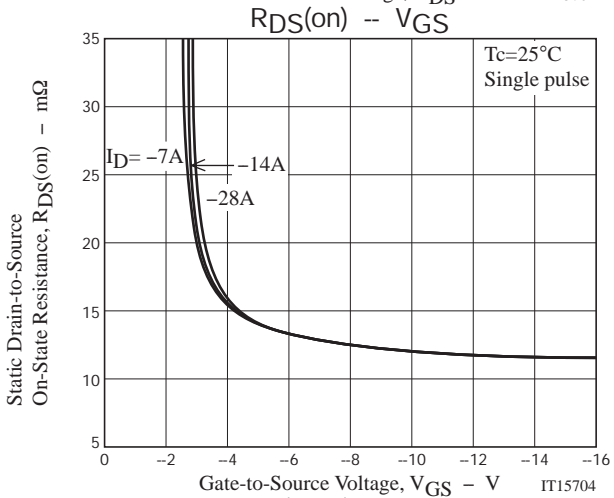
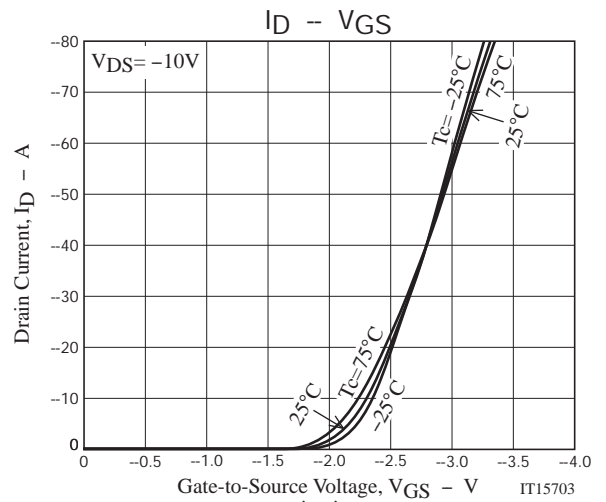
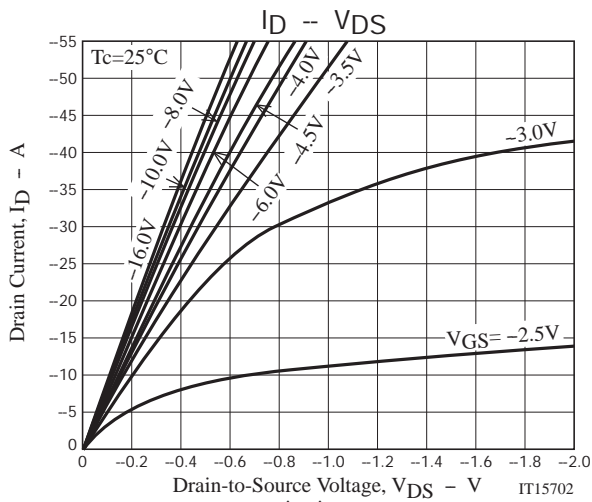
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D =-1mA, V _{GS} =0V	-60			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-28A		65		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-28A, V _{GS} =-10V		12	16	mΩ
	R _{DS(on)2}	I _D =-14A, V _{GS} =-4.5V		15	21	mΩ
	R _{DS(on)3}	I _D =-7A, V _{GS} =-4V		16.5	24	mΩ
Input Capacitance	C _{iss}			4000		pF
Output Capacitance	C _{oss}	V _{DS} =-20V, f=1MHz		400		pF
Reverse Transfer Capacitance	C _{rss}			315		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		19		ns
Rise Time	t _r			200		ns
Turn-OFF Delay Time	t _{d(off)}			450		ns
Fall Time	t _f			300		ns
Total Gate Charge	Q _g				92	
Gate-to-Source Charge	Q _{gs}	V _{DS} =-30V, V _{GS} =-10V, I _D =-55Ap		15		nC
Gate-to-Drain "Miller" Charge	Q _{gd}			15.5		nC
Diode Forward Voltage	V _{SD}		I _S =-55A, V _{GS} =0V		-0.95	-1.5

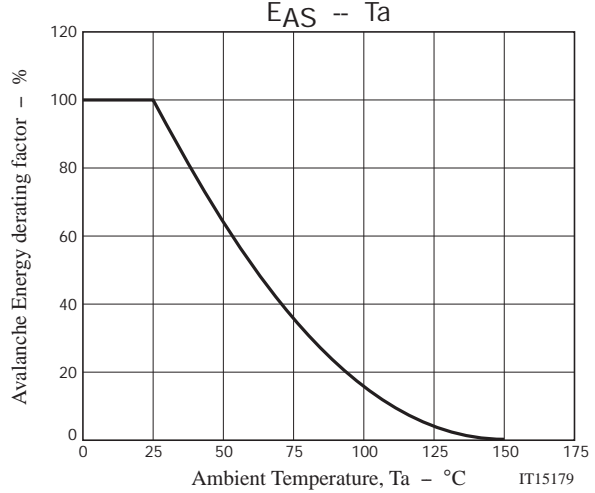
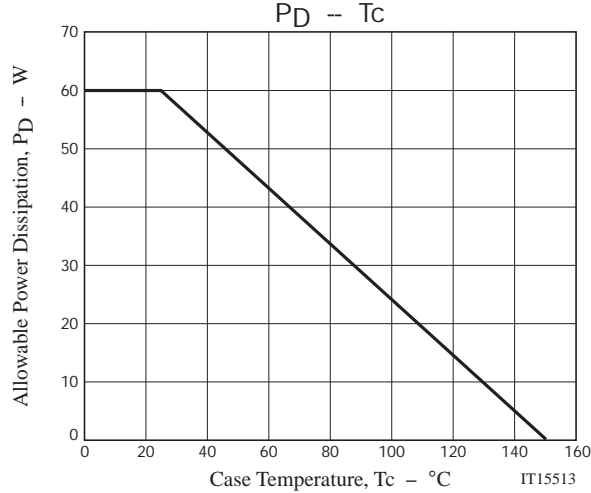
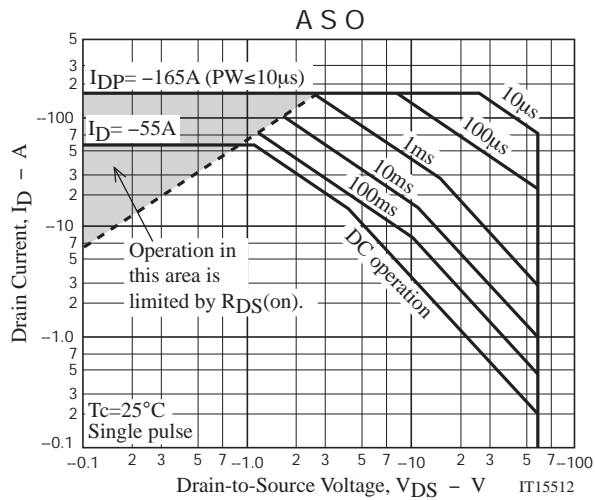
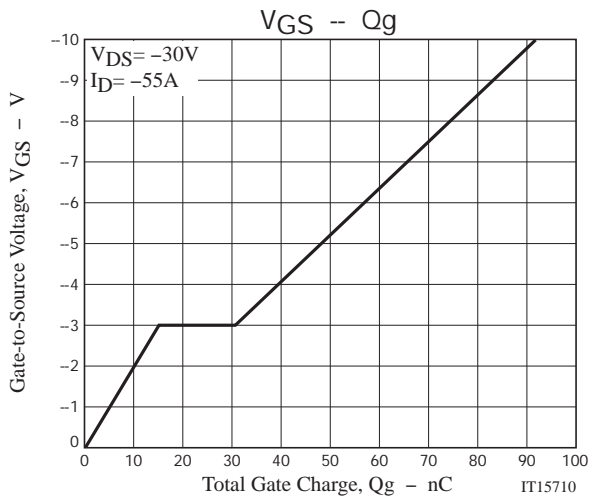
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
ATP114-TL-H	ATPAK	3,000pcs./reel	Pb Free and Halogen Free





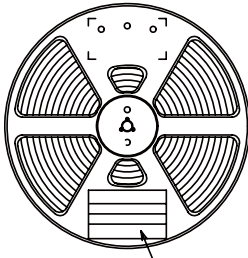
Taping Specification

ATP114-TL-H

1. Packing Format (TL)

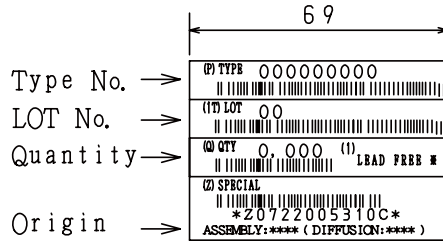
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	INNER BOX SD-C-18	OUTER BOX SD-A-18
ATPAK	ATP	3,000	3,000	15,000	1 reels contained Dimensions:mm (external) 340×340×28	5 inner boxes contained Dimensions:mm (external) 355×355×165

Packing method



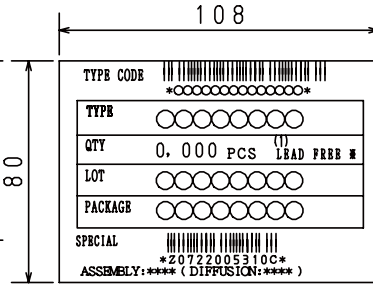
Reel label

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.

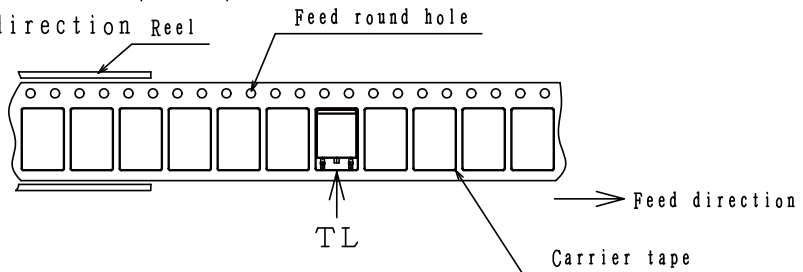
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

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

ATP114

Outline Drawing

ATP114-TL-H



Land Pattern Example



Note on usage : Since the ATP114 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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