



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

ATP113 — General-Purpose Switching Device Applications

Features

- ON-resistance $R_{DS(on)1}=22.5\text{m}\Omega(\text{typ.})$
- 4V drive
- Protection diode in
- Input Capacitance $C_{iss}=2400\text{pF}(\text{typ.})$
- Halogen free compliance

Specifications

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

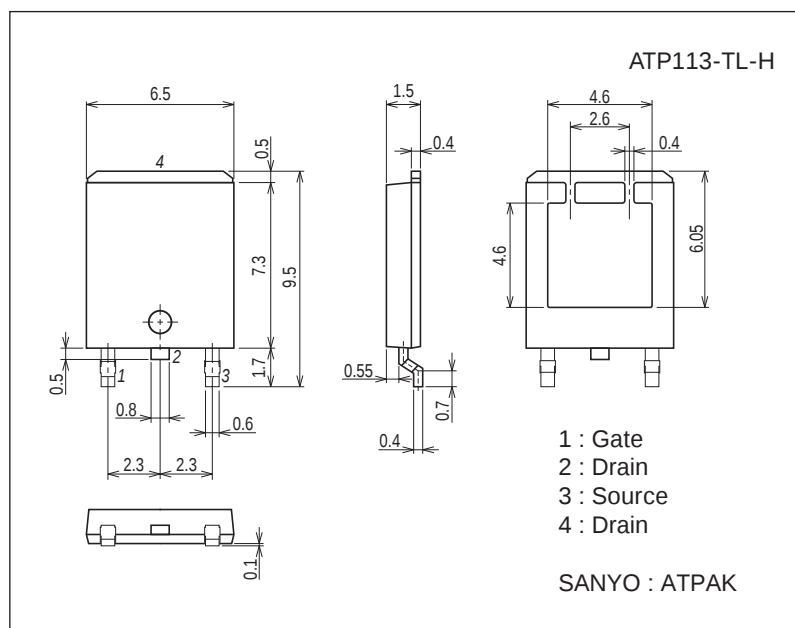
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-60	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		-35	A
Drain Current ($PW \leq 10\mu\text{s}$)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-105	A
Allowable Power Dissipation	P_D	$T_c=25^\circ\text{C}$	50	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}		95	mJ
Avalanche Current *2	I_{AV}		-18	A

Note : *1 $V_{DD}=-10\text{V}$, $L=500\mu\text{H}$, $I_{AV}=-18\text{A}$ *2 $L \leq 500\mu\text{H}$, Single pulse

Package Dimensions

unit : mm (typ)

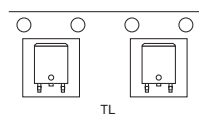
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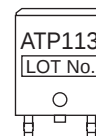
Product & Package Information

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

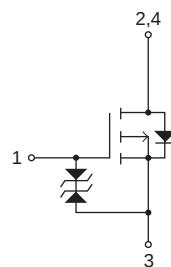
Packing Type: TL



Marking



Electrical Connection

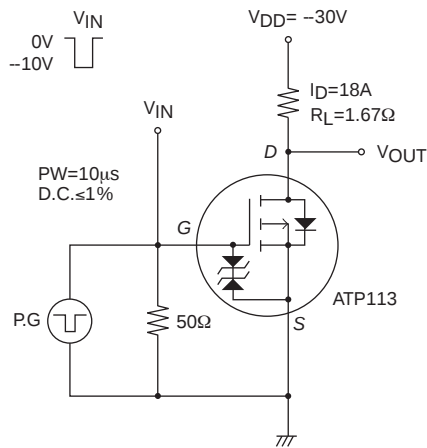


ATP113

Electrical Characteristics at Ta=25°C

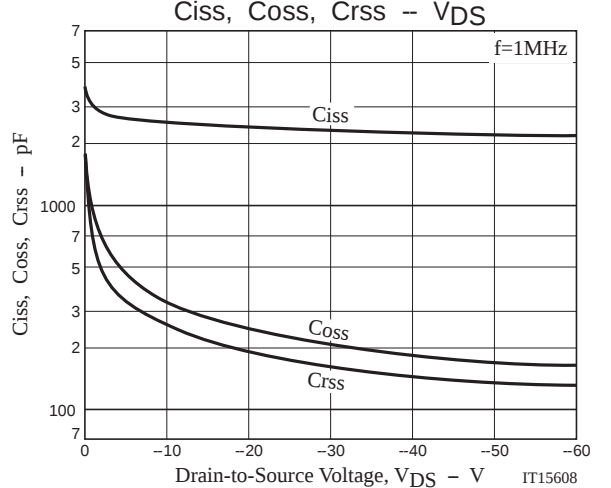
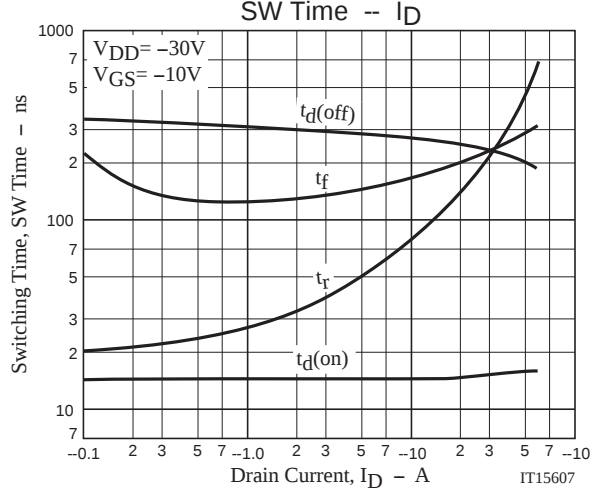
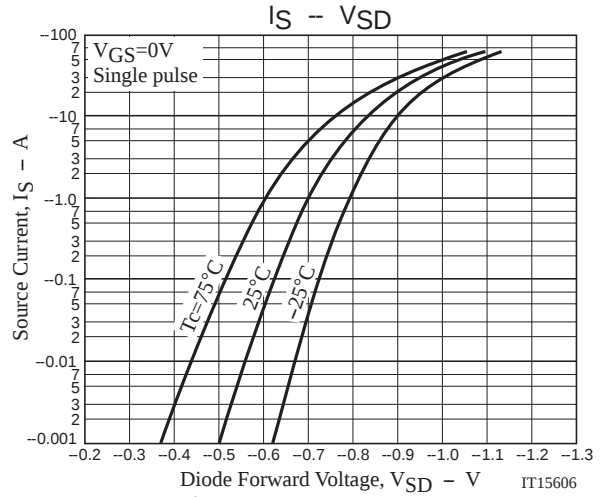
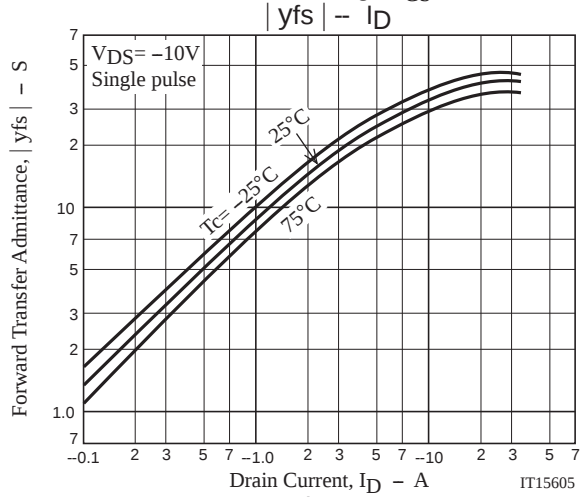
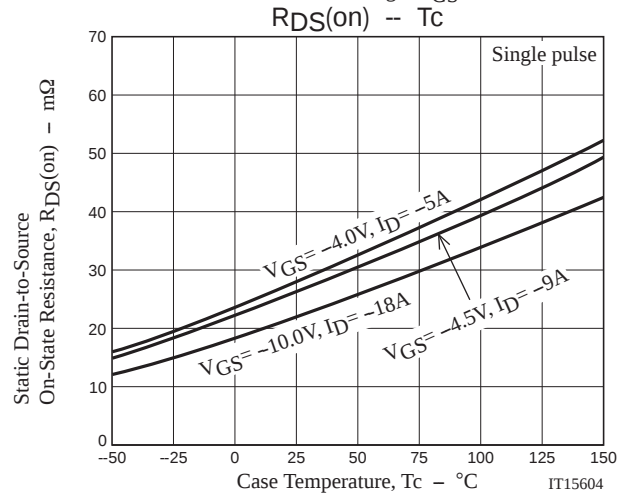
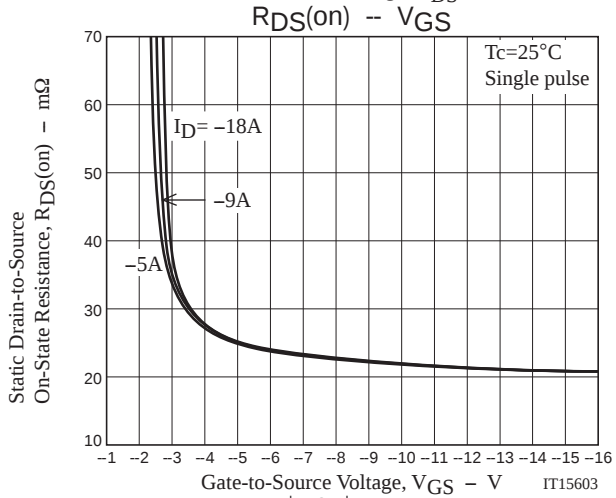
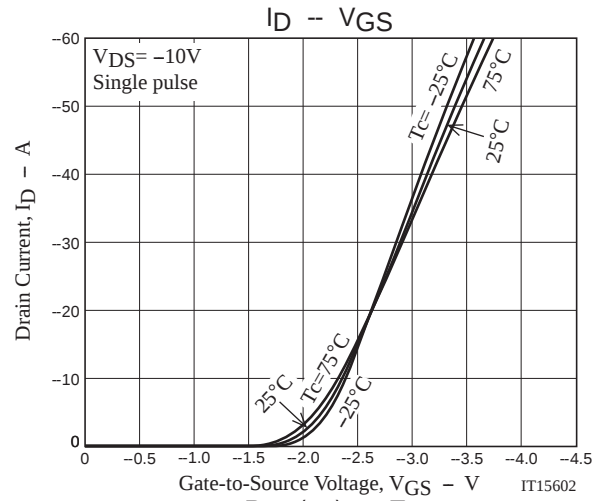
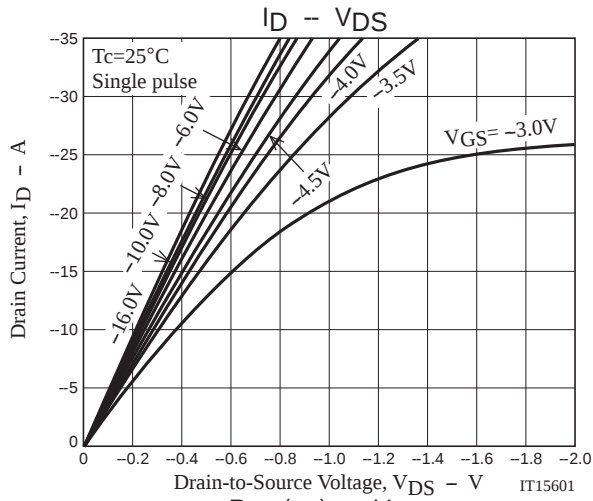
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0V$	-60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -60V, V_{GS} = 0V$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16V, V_{DS} = 0V$			± 10	μA
Cutoff 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

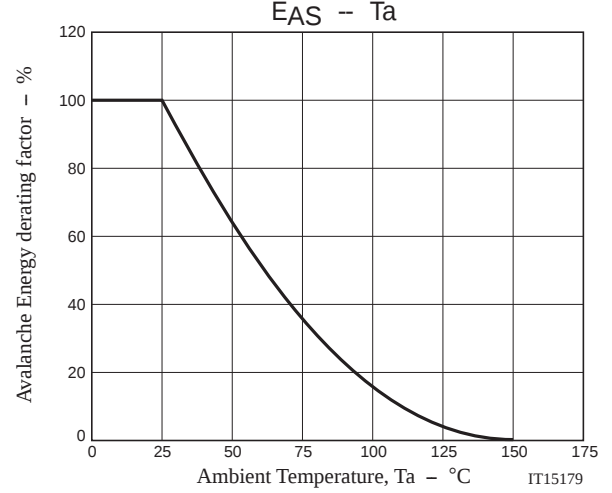
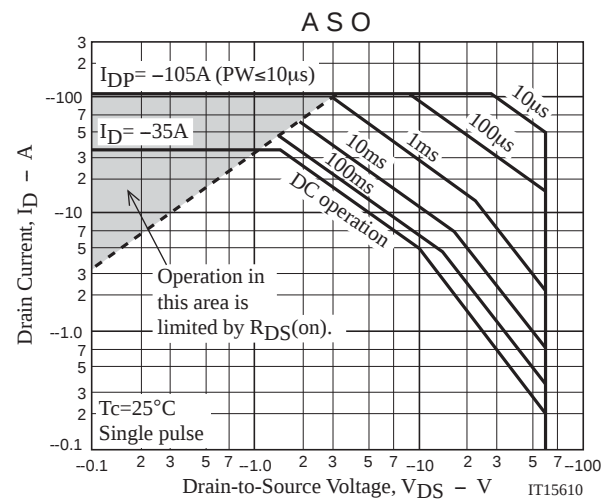
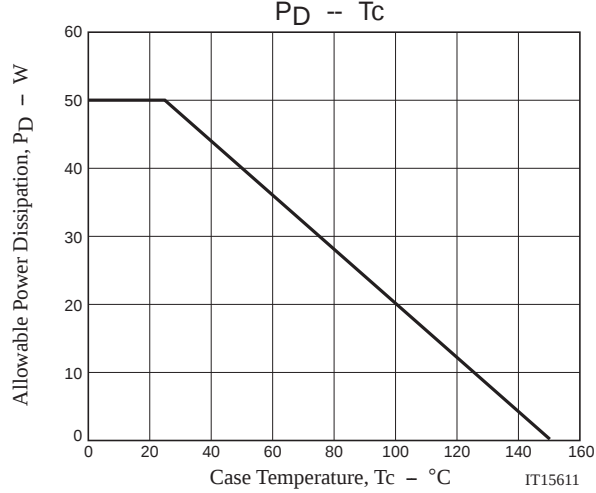
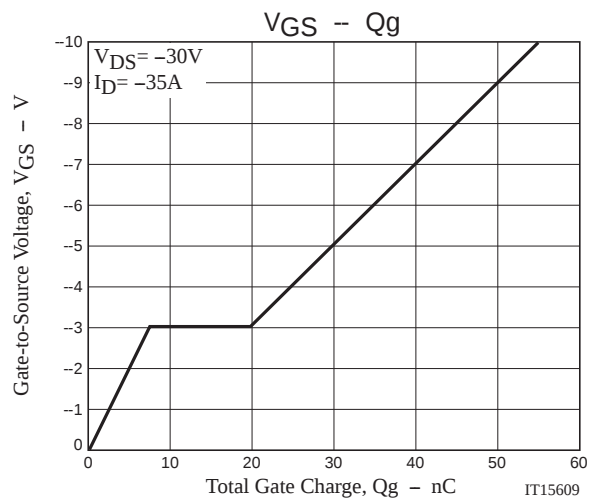
Switching Time Test Circuit



Ordering Information

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



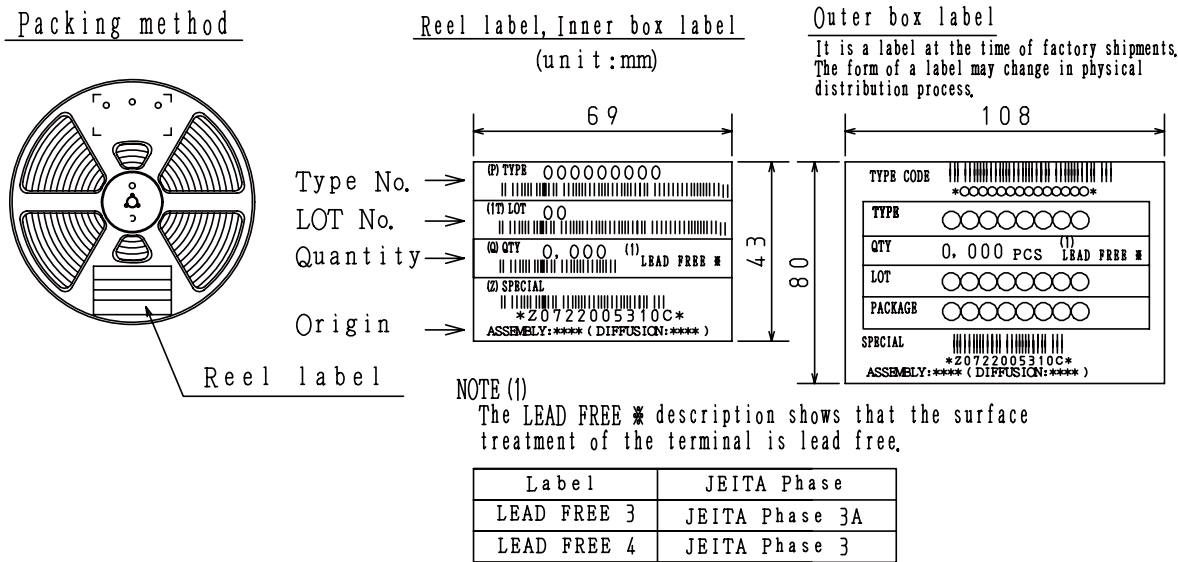


Taping Specification

ATP113-TL-H

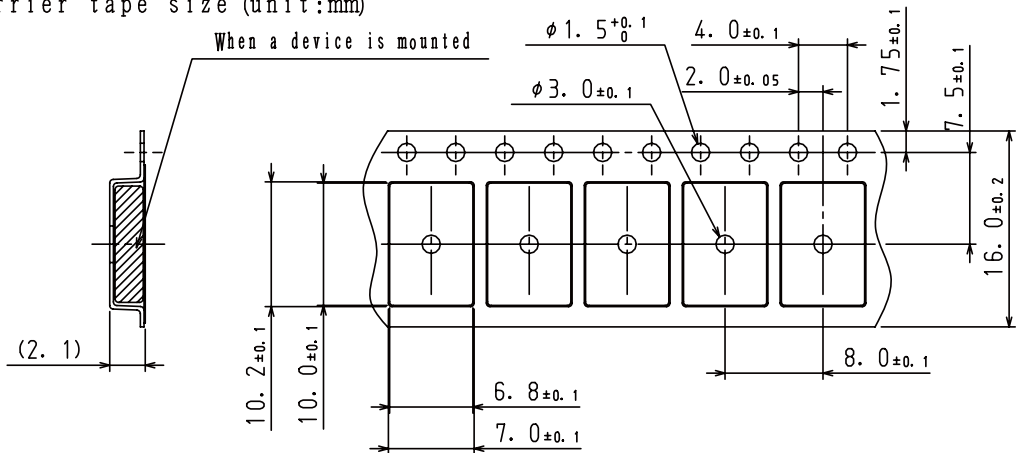
1. Packing Format (TL)

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

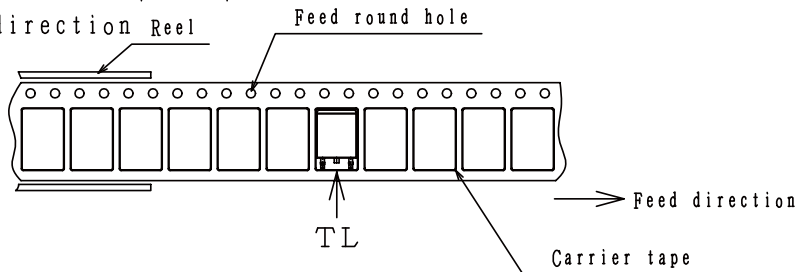


2. Taping configuration

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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