



N-Channel Silicon MOSFET

# ATP216 — General-Purpose Switching Device Applications

## Features

- ON-resistance  $R_{DS(on)1}=17m\Omega$ (typ.)
- 1.8V drive
- Slim package
- Halogen free compliance

## Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		50	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 10$	V
Drain Current (DC)	$I_D$		35	A
Drain Current ( $PW \leq 10\mu s$ )	$I_{DP}$	$PW \leq 10\mu s$ , duty cycles $\leq 1\%$	105	A
Allowable Power Dissipation	$P_D$	$T_c=25^\circ C$	40	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$
Avalanche Energy (Single Pulse) *1	$E_{AS}$		40	mJ
Avalanche Current *2	$I_{AV}$		17.5	A

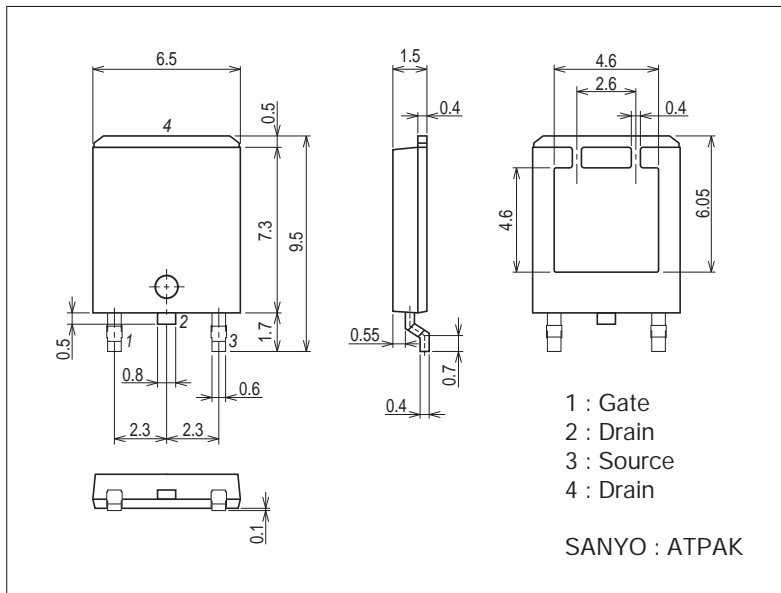
Note : \*1  $V_{DD}=10V$ ,  $L=100\mu H$ ,  $I_{AV}=18A$

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

## Package Dimensions

unit : mm (typ)

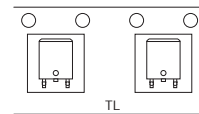
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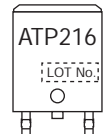
## Product & Package Information

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

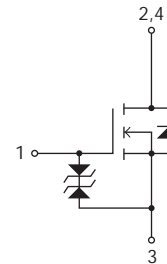
## Packing Type: TL



## Marking



## Electrical Connection

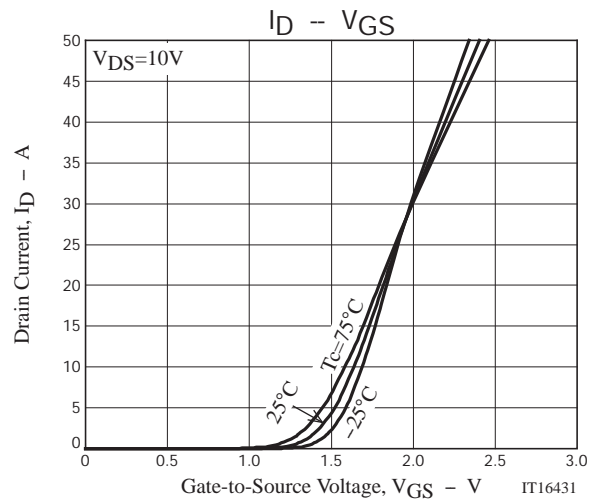
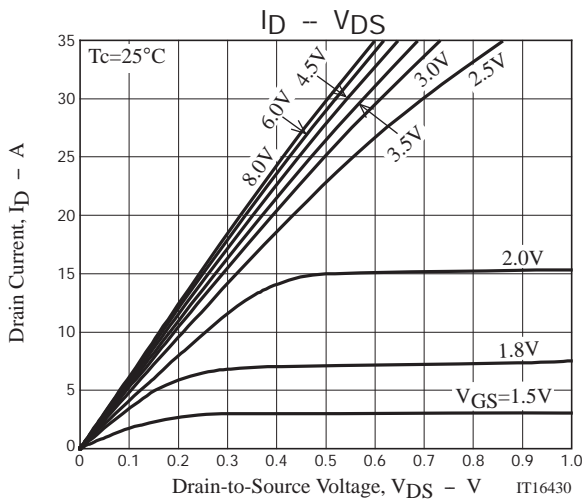
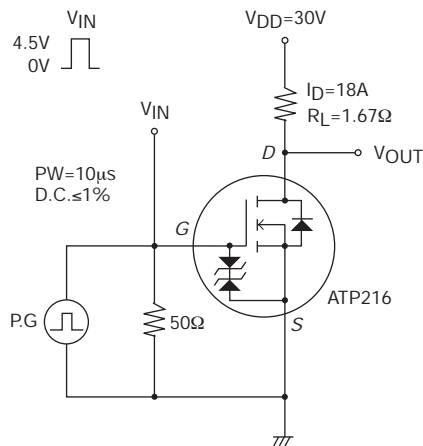


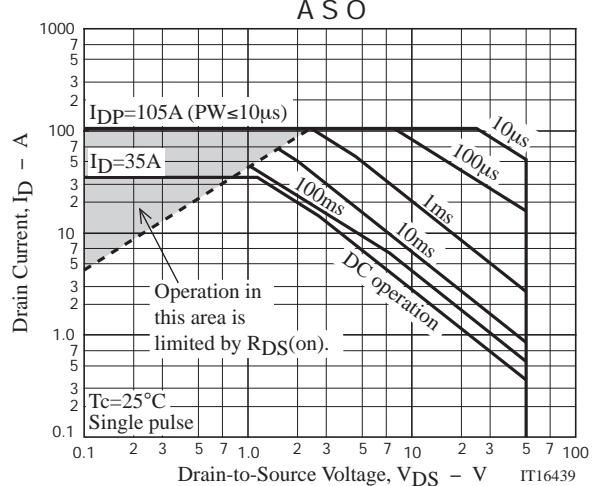
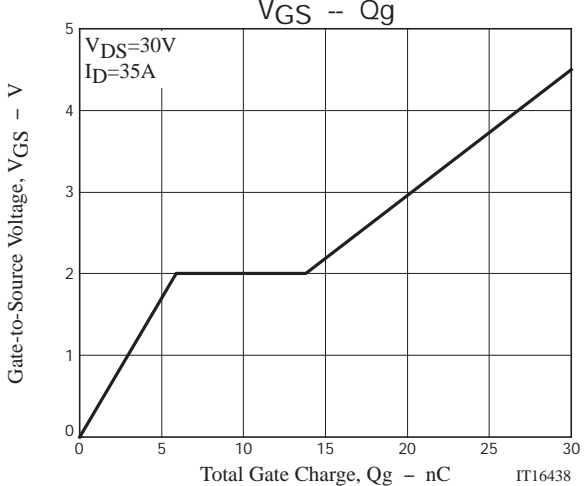
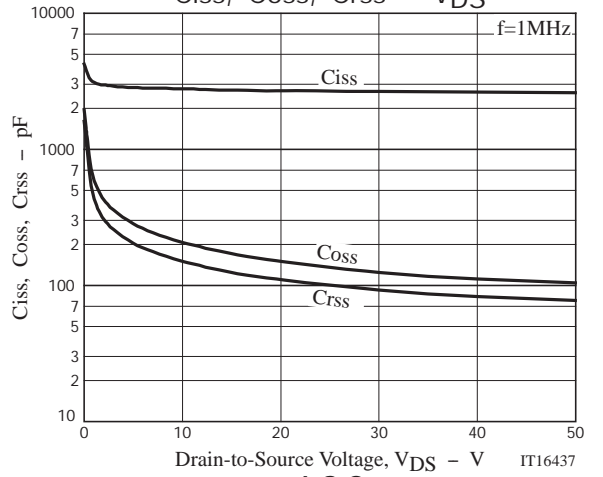
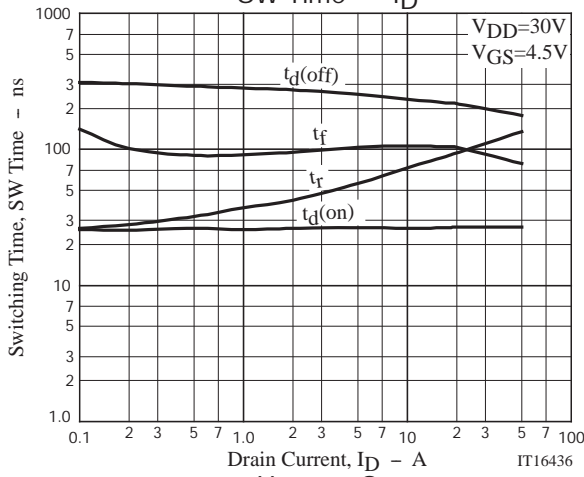
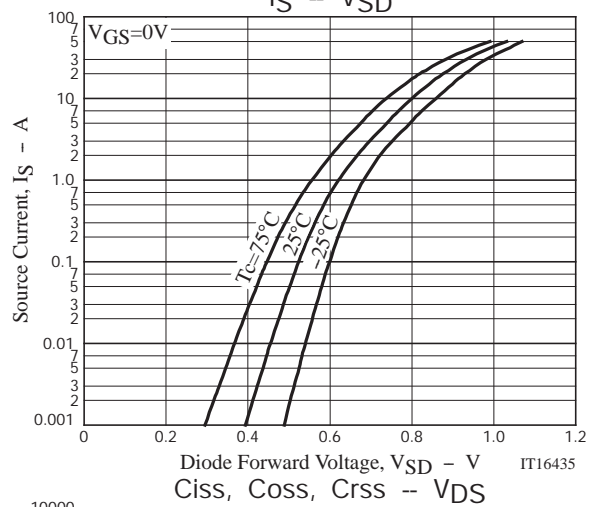
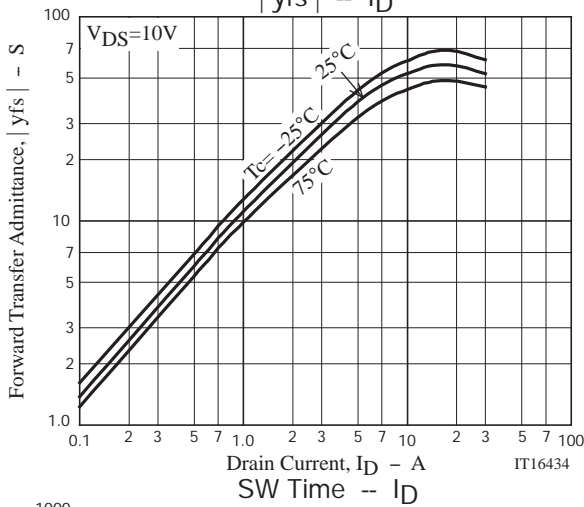
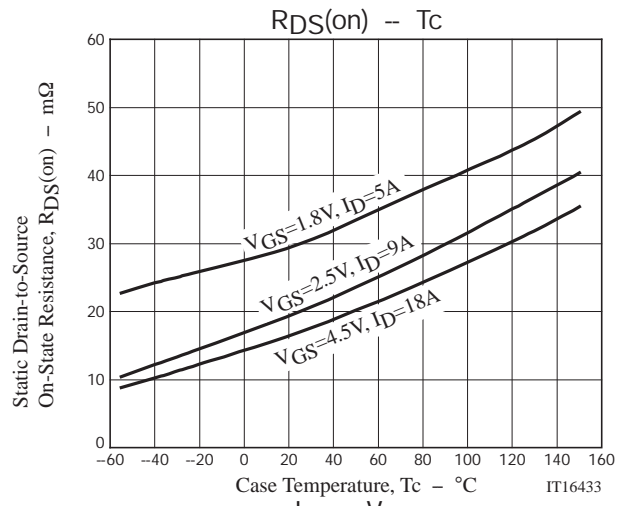
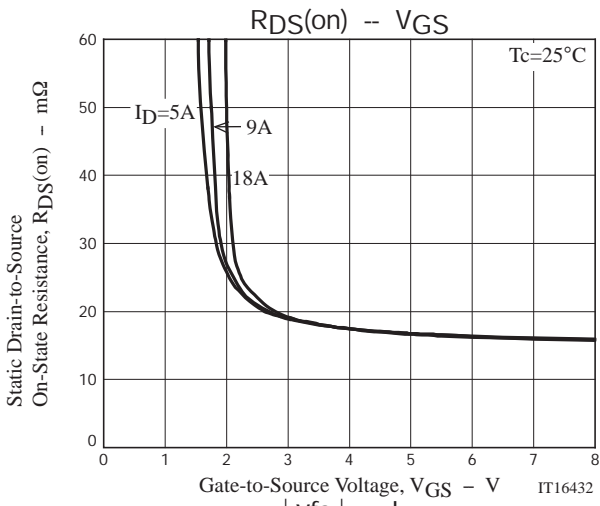
# ATP216

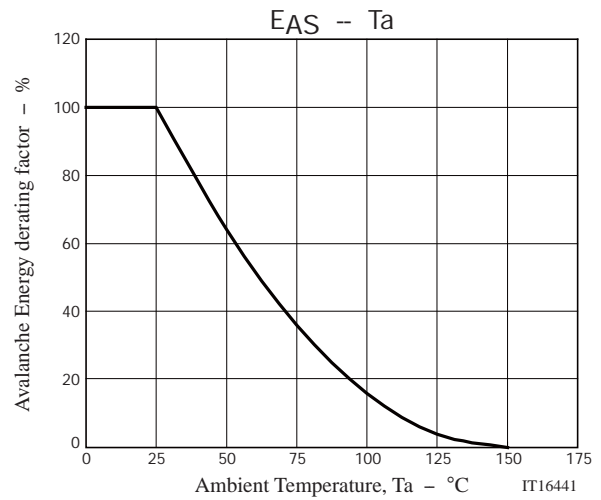
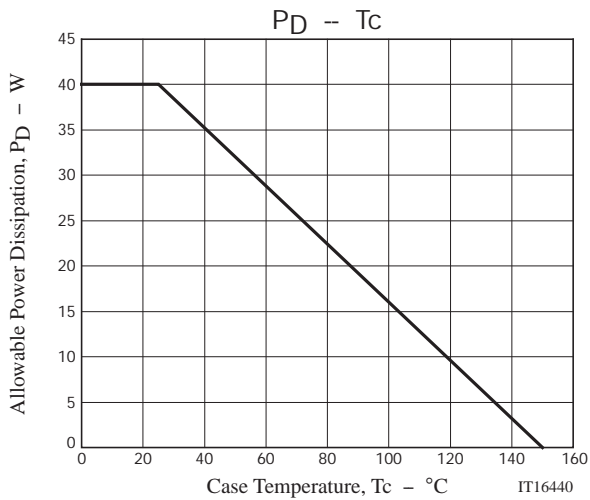
## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	50			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=50V, V_{GS}=0V$			1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 8V, V_{DS}=0V$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	0.4		1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=18A$		58		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=18A, V_{GS}=4.5V$		17	23	$m\Omega$
	$R_{DS(on)2}$	$I_D=9A, V_{GS}=2.5V$		20	28	$m\Omega$
	$R_{DS(on)3}$	$I_D=5A, V_{GS}=1.8V$		30	45	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		2700		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$		150		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$		110		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		27		ns
Rise Time	$t_r$	See specified Test Circuit.		90		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		220		ns
Fall Time	$t_f$	See specified Test Circuit.		105		ns
Total Gate Charge	$Q_g$	$V_{DS}=30V, V_{GS}=4.5V, I_D=35A$		30		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=30V, V_{GS}=4.5V, I_D=35A$		5.9		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=30V, V_{GS}=4.5V, I_D=35A$		7.9		nC
Diode Forward Voltage	$V_{SD}$	$I_S=35A, V_{GS}=0V$		0.96	1.2	V

## Switching Time Test Circuit







Note on usage : Since the ATP216 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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