



# ATP214 — N-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- ON-resistance  $R_{DS(on)1}=6.2m\Omega$ (typ.)
- 4V drive
- 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 cycles $\leq 1\%$	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

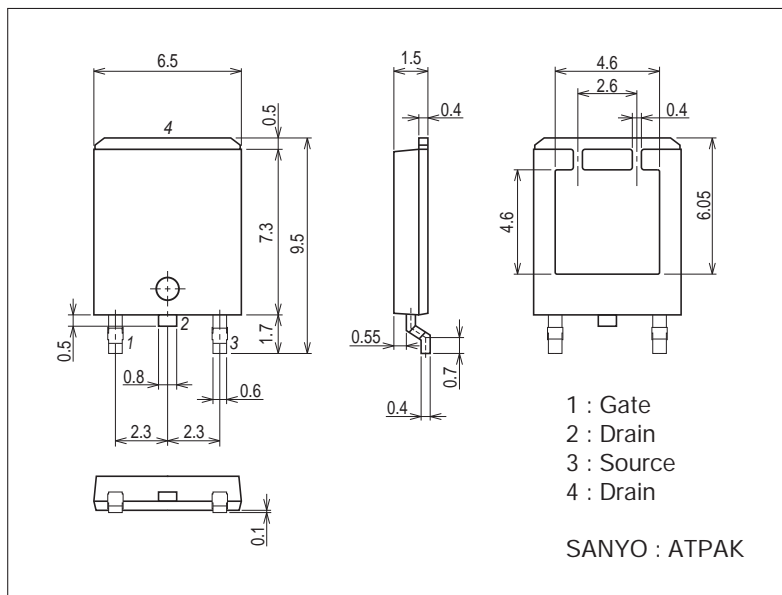
Note : \*1  $V_{DD}=15V$ ,  $L=100\mu H$ ,  $I_{AV}=38A$

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

### Package Dimensions

unit : mm (typ)

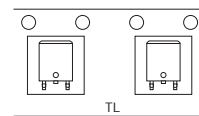
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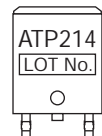
### Product & Package Information

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

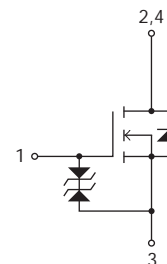
### Packing Type: TL



### Marking



### Electrical Connection

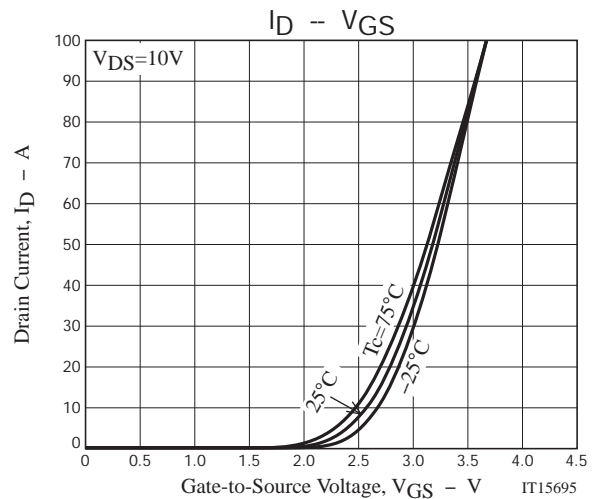
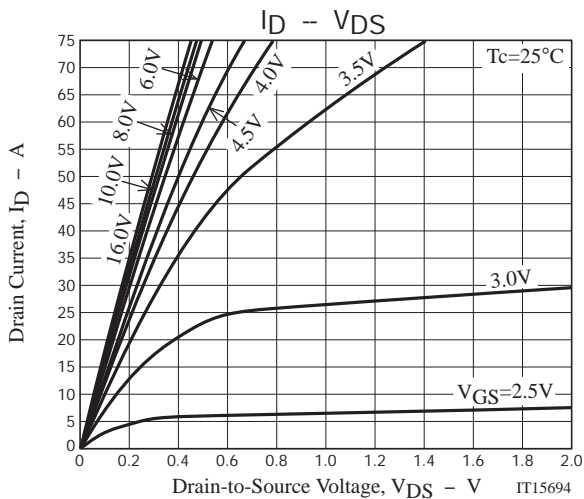
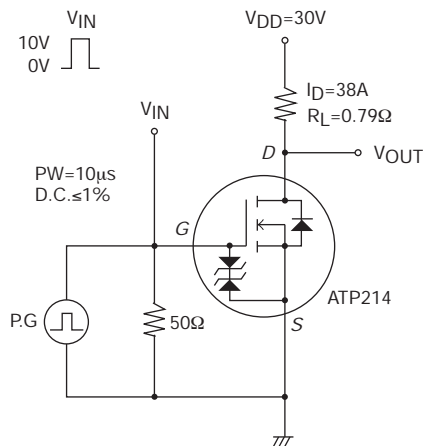


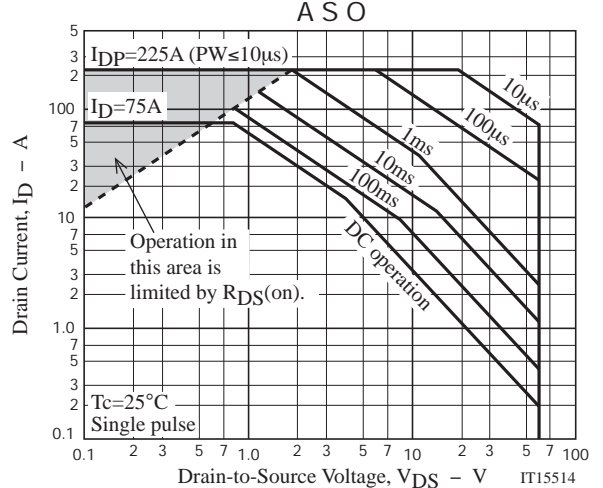
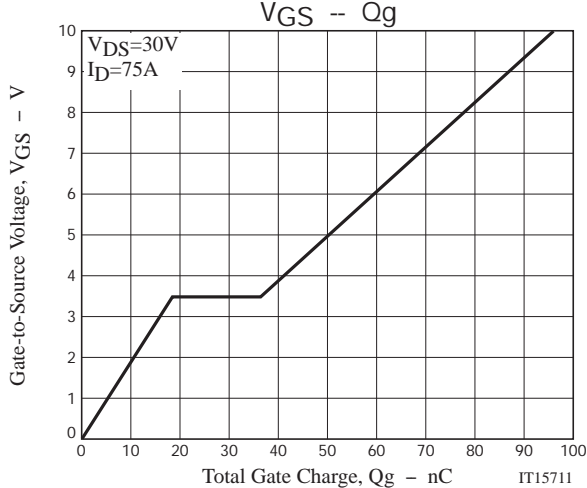
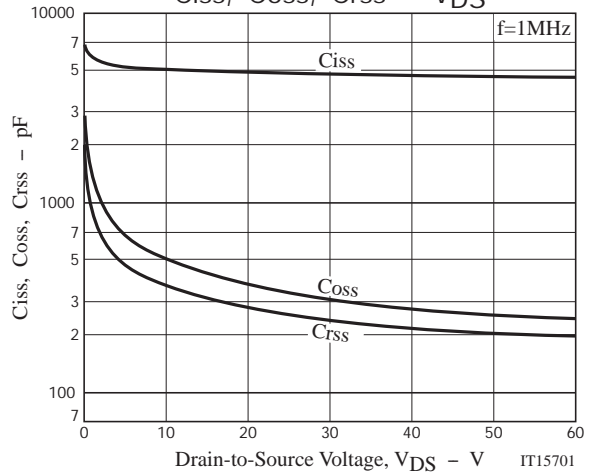
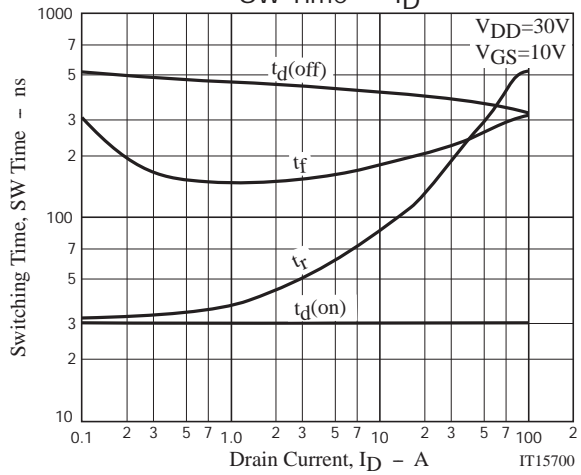
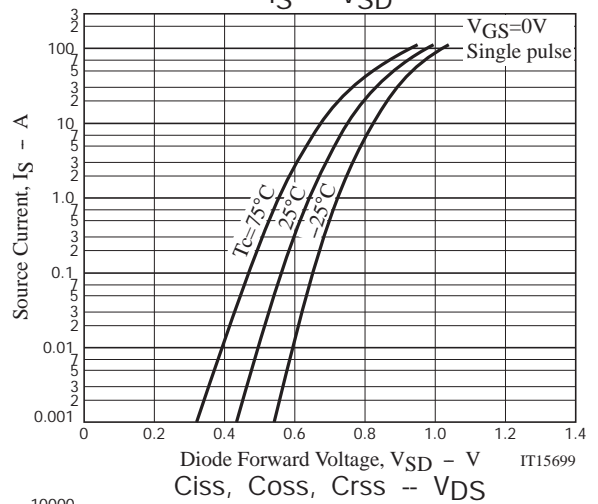
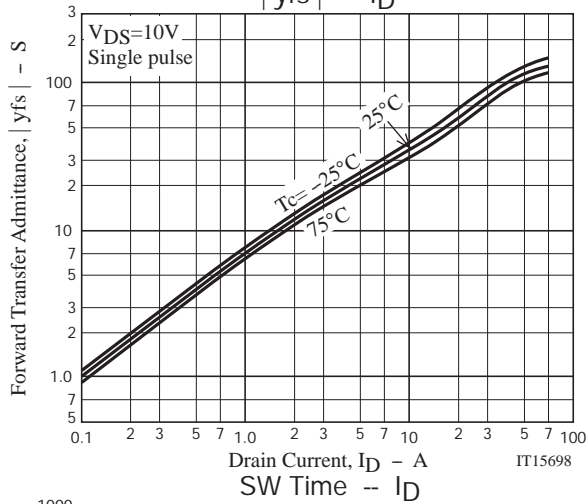
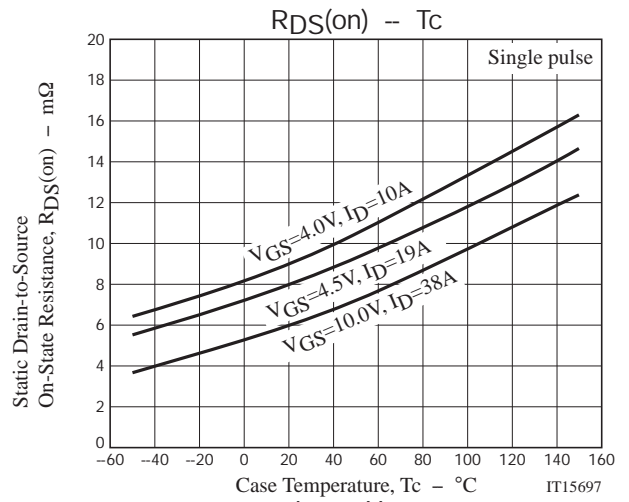
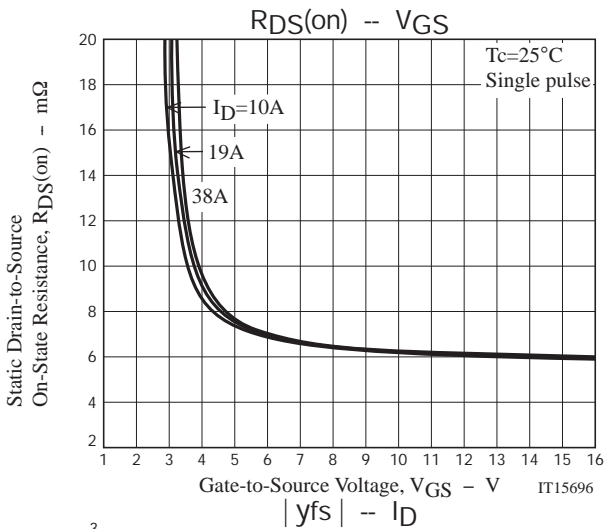
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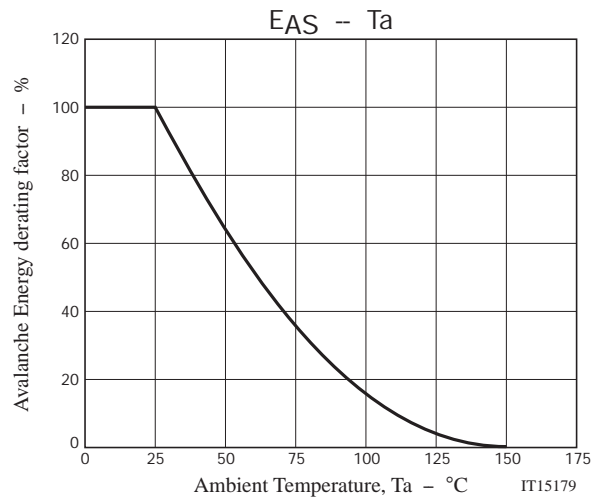
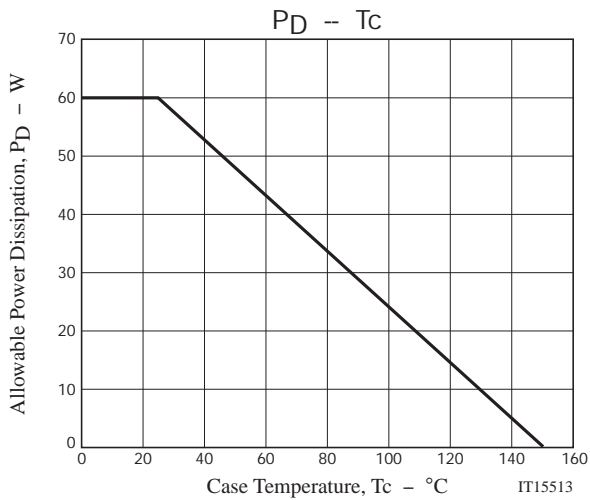
## Electrical Characteristics at Ta=25°C

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	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16V, V_{DS}=0V$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=38A$		100		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=38A, V_{GS}=10V$		6.2	8.1	$m\Omega$
	$R_{DS(on)2}$	$I_D=19A, V_{GS}=4.5V$		8.2	11.5	$m\Omega$
	$R_{DS(on)3}$	$I_D=10A, V_{GS}=4V$		9.2	14	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		4850		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$		370		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$		280		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		30		ns
Rise Time	$t_r$	See specified Test Circuit.		240		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		360		ns
Fall Time	$t_f$	See specified Test Circuit.		250		ns
Total Gate Charge	$Q_g$	$V_{DS}=30V, V_{GS}=10V, I_D=75A$		96		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=30V, V_{GS}=10V, I_D=75A$		18.5		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=30V, V_{GS}=10V, I_D=75A$		18		nC
Diode Forward Voltage	$V_{SD}$	$I_S=75A, V_{GS}=0V$		0.93	1.2	V

## Switching Time Test Circuit







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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