



ATP213 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Large current.
- Slim package.
- 4V drive.
- Halogen free compliance.

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		60	V
Gate-to-Source Voltage	V_{GS}		± 20	V
Drain Current (DC)	I_D		50	A
Drain Current ($PW \leq 10\mu\text{s}$)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	150	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}		37	mJ
Avalanche Current *2	I_{AV}		25	A

Note : *1 $V_{DD}=10\text{V}$, $L=100\mu\text{H}$, $I_{AV}=25\text{A}$

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

Electrical Characteristics at $T_a=25^\circ\text{C}$

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

Marking : ATP213

Continued on next page.

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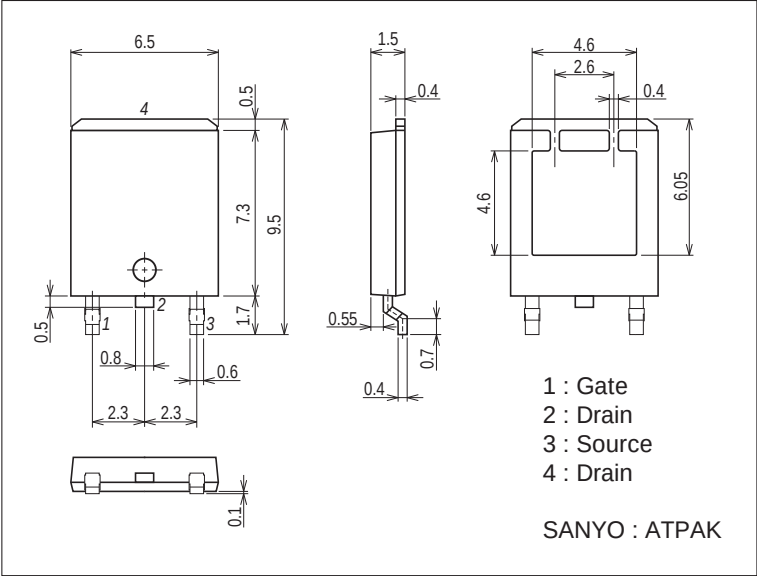
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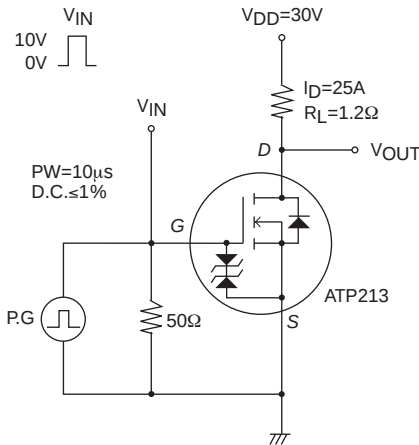
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=25A$		55		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=25A, V_{GS}=10V$		12	16	mΩ
	$R_{DS(on)2}$	$I_D=13A, V_{GS}=4.5V$		15	21	mΩ
	$R_{DS(on)3}$	$I_D=7A, V_{GS}=4V$		17	26	mΩ
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		3150		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		310		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		190		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		23		ns
Rise Time	t_r	See specified Test Circuit.		170		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		230		ns
Fall Time	t_f	See specified Test Circuit.		150		ns
Total Gate Charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_D=50A$		58		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=30V, V_{GS}=10V, I_D=50A$		10.5		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=30V, V_{GS}=10V, I_D=50A$		12.5		nC
Diode Forward Voltage	V_{SD}	$I_S=50A, V_{GS}=0V$		1.01	1.2	V

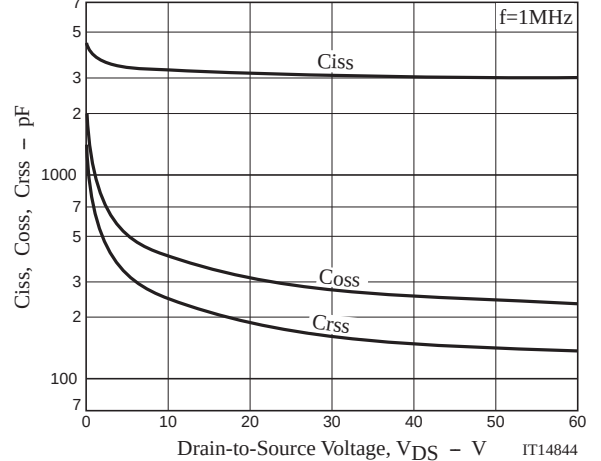
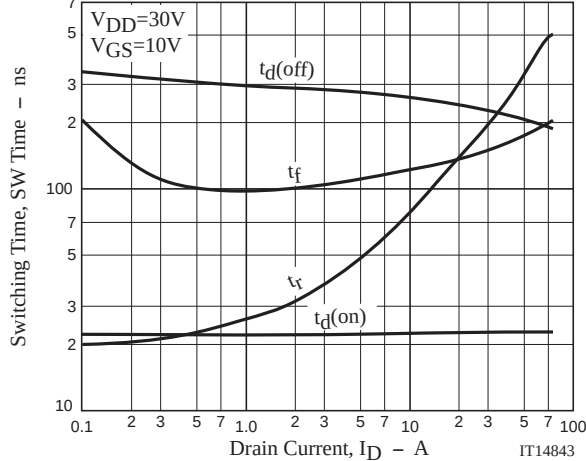
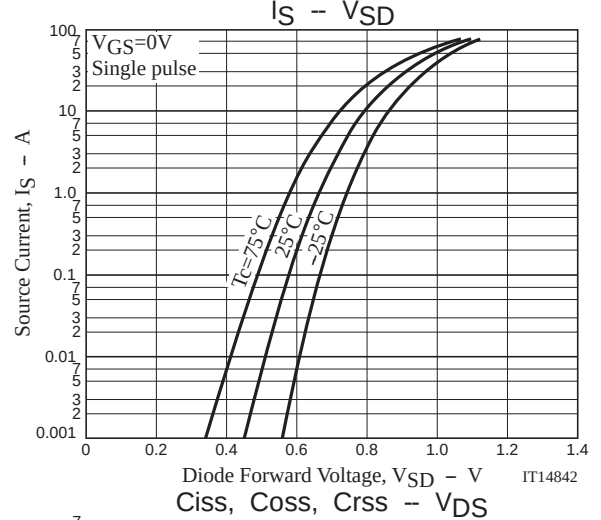
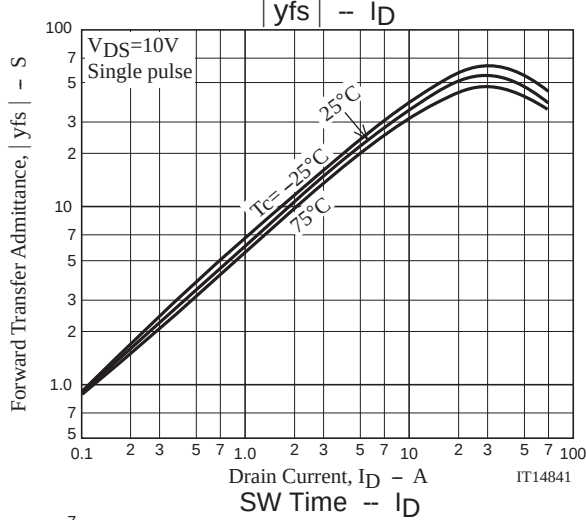
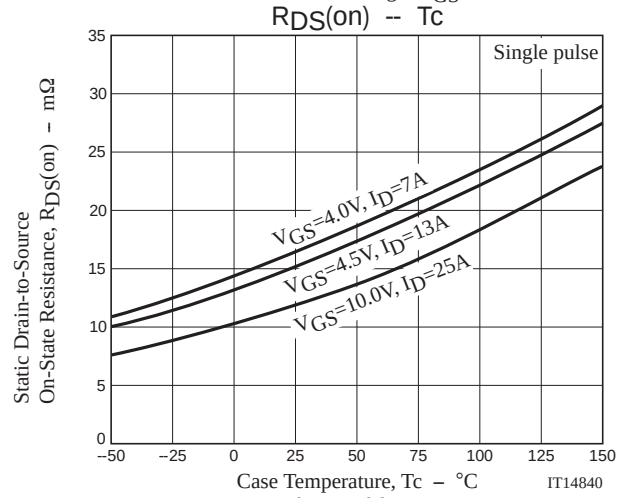
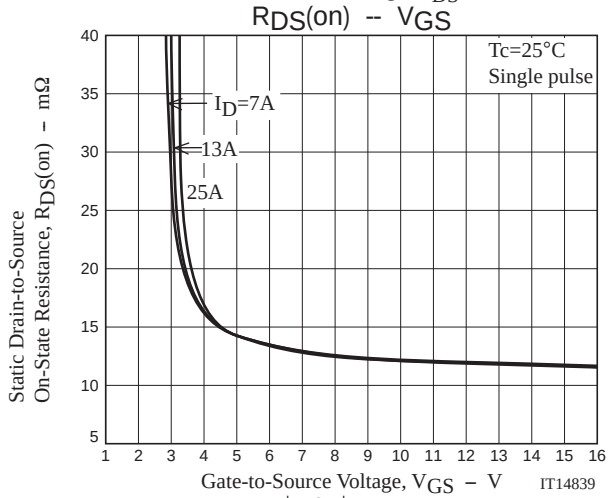
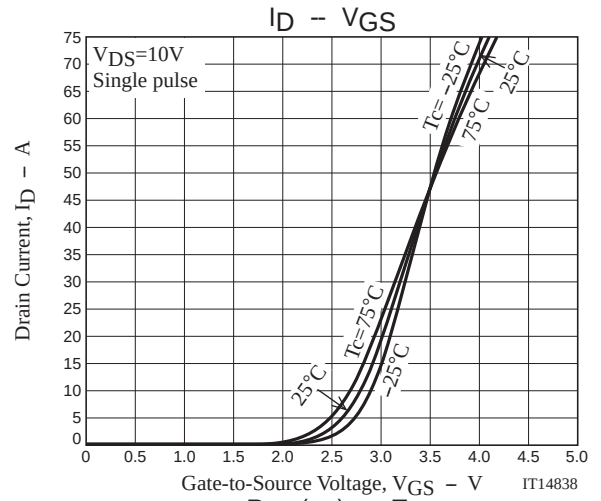
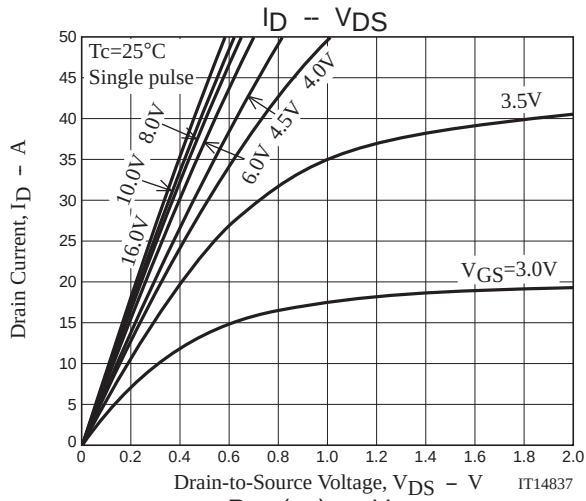
Package Dimensions

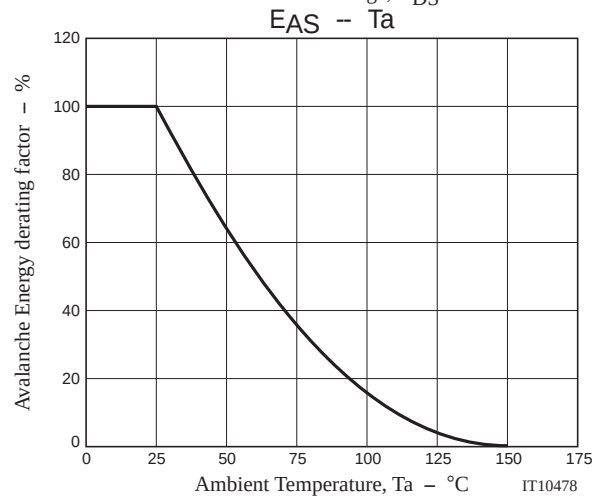
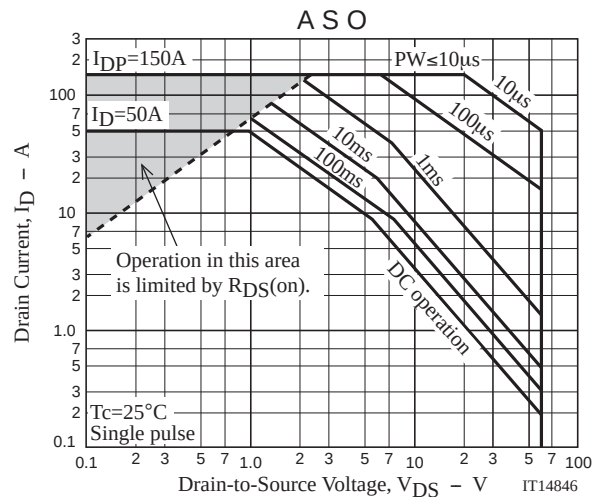
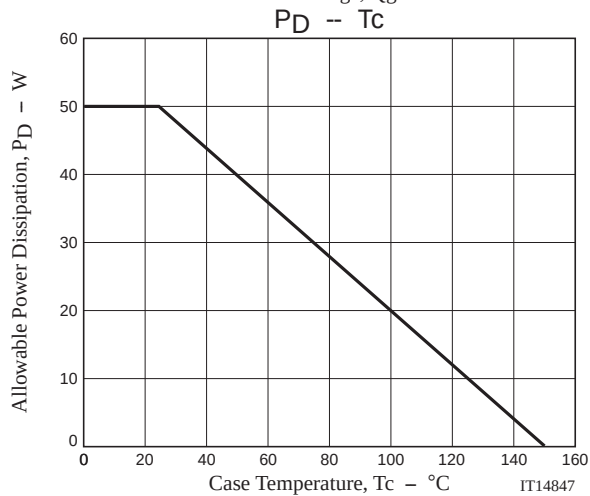
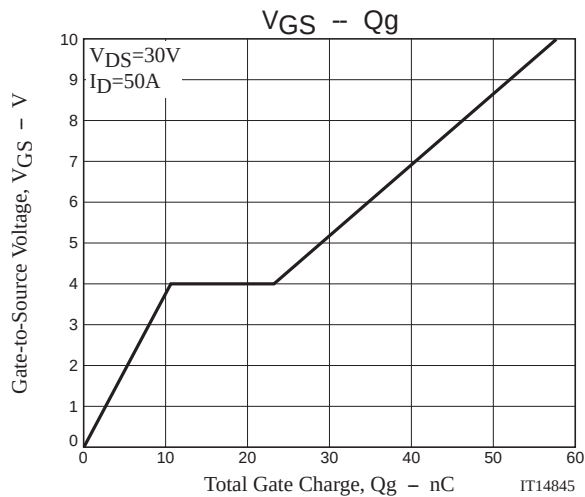
unit : mm (typ)
7057-001



Switching Time Test Circuit







Note on usage : Since the ATP213 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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