



ATP405 — N-Channel Silicon MOSFET

General-Purpose Switching Device

Applications

Features

- 10V drive.
- Avalanche resistance guarantee.
- Halogen free compliance.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		100	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		40	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	160	A
Allowable Power Dissipation	P _D	Tc=25°C	70	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E _{AS}		148	mJ
Avalanche Current *2	I _{AV}		40	A

Note : *1 V_{DD}=30V, L=100μH, I_{AV}=40A

*2 L≤100μH, Single pulse

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	100			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			10	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	2.0		3.5	V

Marking : ATP405

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ATP405

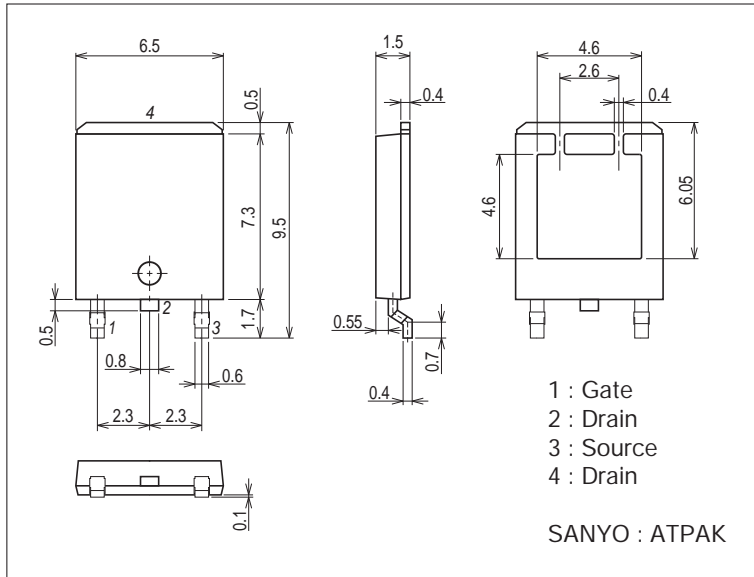
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=20A$		62		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=20A, V_{GS}=10V$		25	33	$m\Omega$
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		4000		pF
Output Capacitance	Coss	$V_{DS}=20V, f=1MHz$		300		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20V, f=1MHz$		170		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		38		ns
Rise Time	t_r	See specified Test Circuit.		125		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		220		ns
Fall Time	t_f	See specified Test Circuit.		150		ns
Total Gate Charge	Qg	$V_{DS}=60V, V_{GS}=10V, I_D=40A$		68		nC
Gate-to-Source Charge	Qgs	$V_{DS}=60V, V_{GS}=10V, I_D=40A$		14		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=60V, V_{GS}=10V, I_D=40A$		15		nC
Diode Forward Voltage	V_{SD}	$I_S=40A, V_{GS}=0V$		0.9	1.2	V

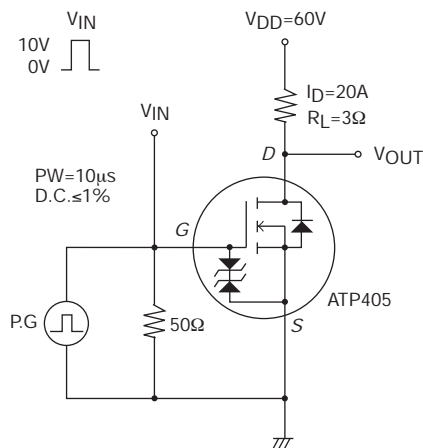
Package Dimensions

unit : mm (typ)

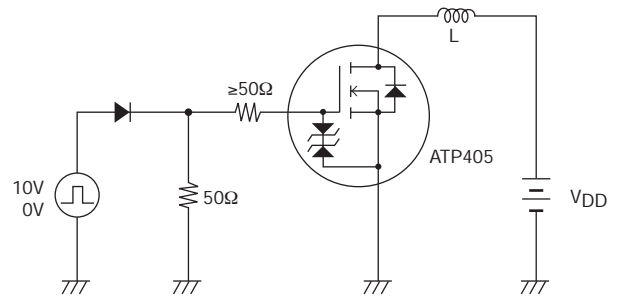
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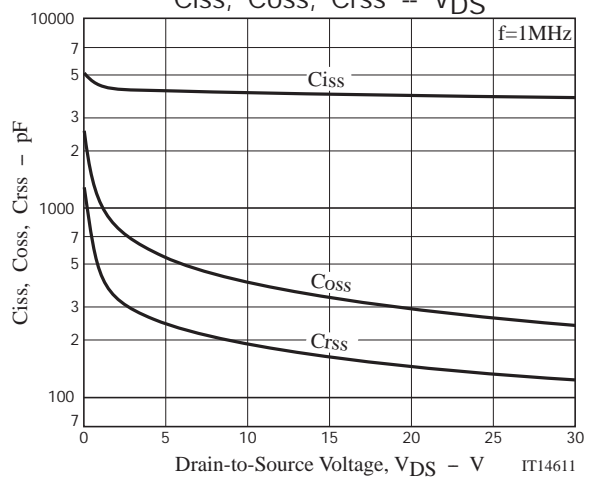
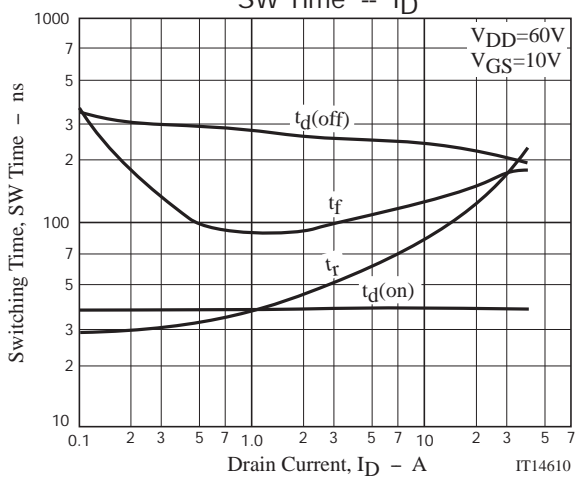
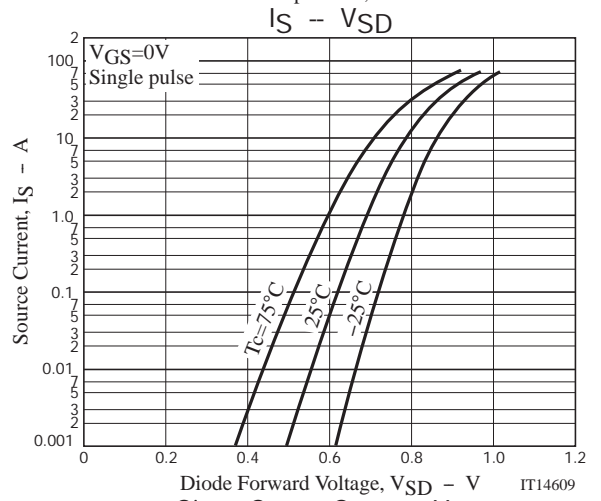
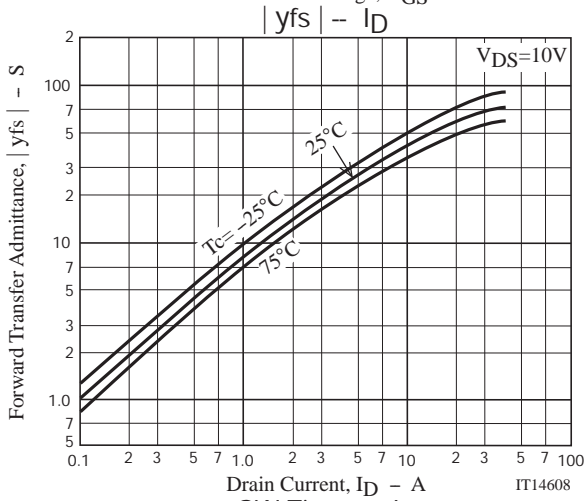
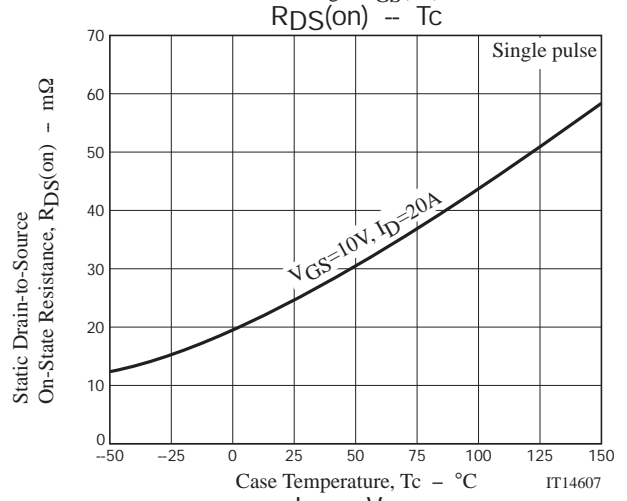
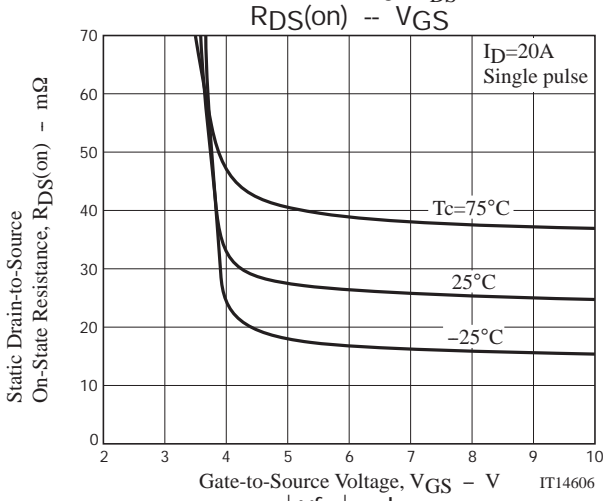
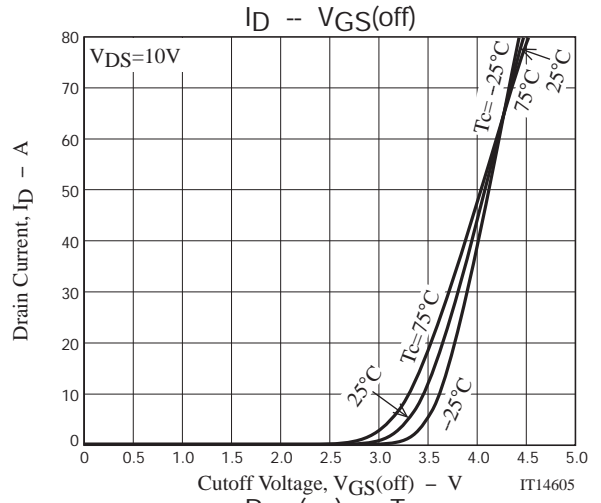
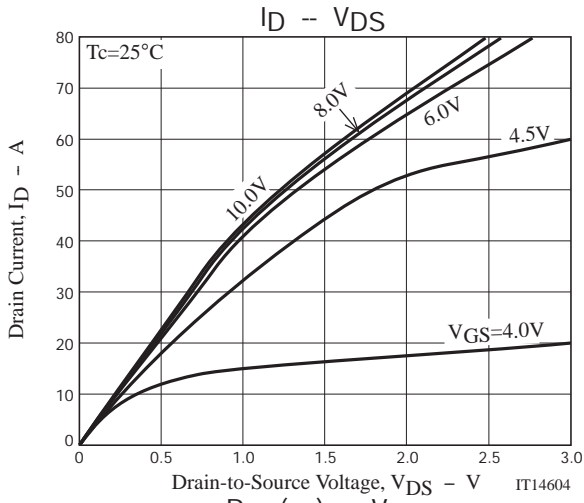


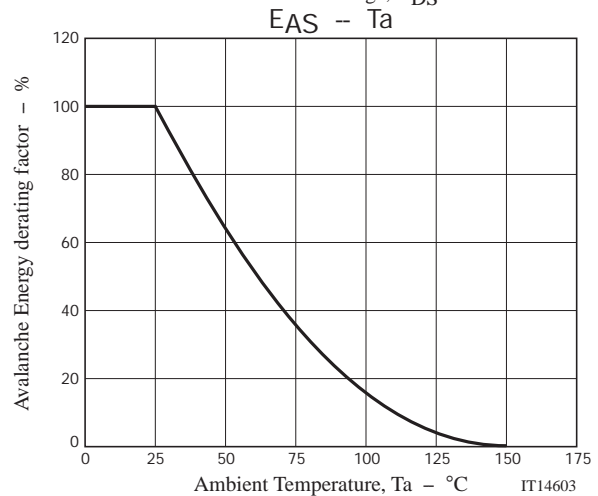
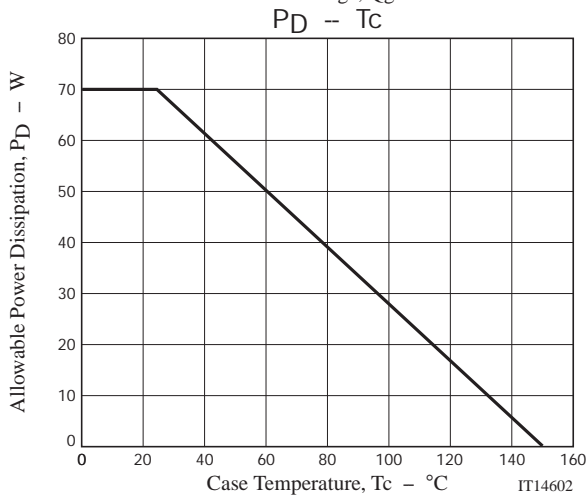
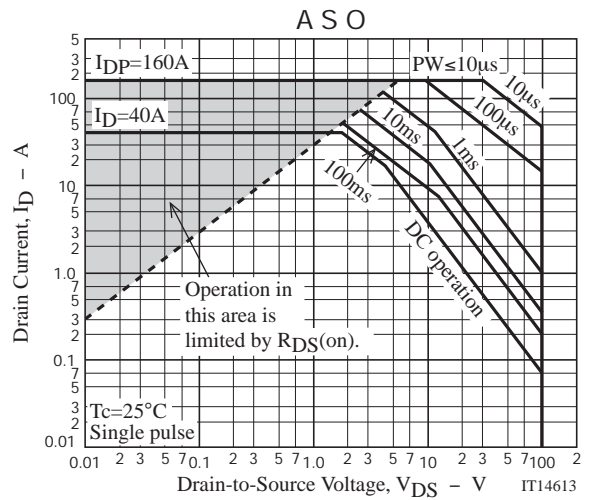
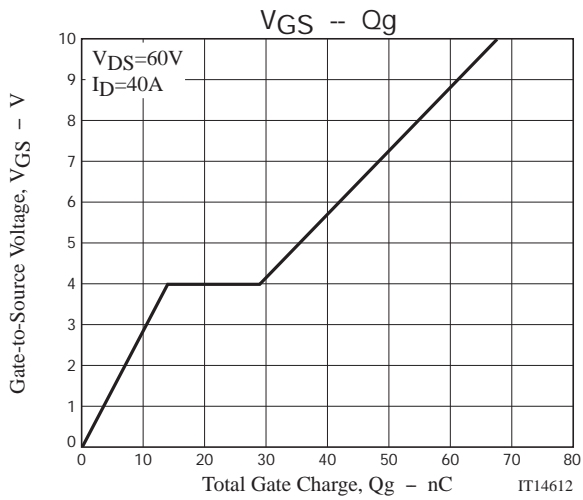
Switching Time Test Circuit



Avalanche Resistance Test Circuit







Note on usage : Since the ATP405 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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