



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

ATP301 — General-Purpose Switching Device Applications

Features

- Avalanche resistance guarantee.
- 10V 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_{DSS}		-100	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		-28	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-112	A
Allowable Power Dissipation	P_D	$T_c=25^\circ\text{C}$	70	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}		54	mJ
Avalanche Current *2	I_{AV}		-28	A

Note : *1 $V_{DD}=-30\text{V}$, $L=100\mu\text{H}$, $I_{AV}=-28\text{A}$ *2 $L \leq 100\mu\text{H}$, Single pulseElectrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1\text{mA}$, $V_{GS}=0\text{V}$	-100			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-100\text{V}$, $V_{GS}=0\text{V}$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10\text{V}$, $I_D=-1\text{mA}$	-2.0		-3.5	V

Marking : ATP301

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ATP301

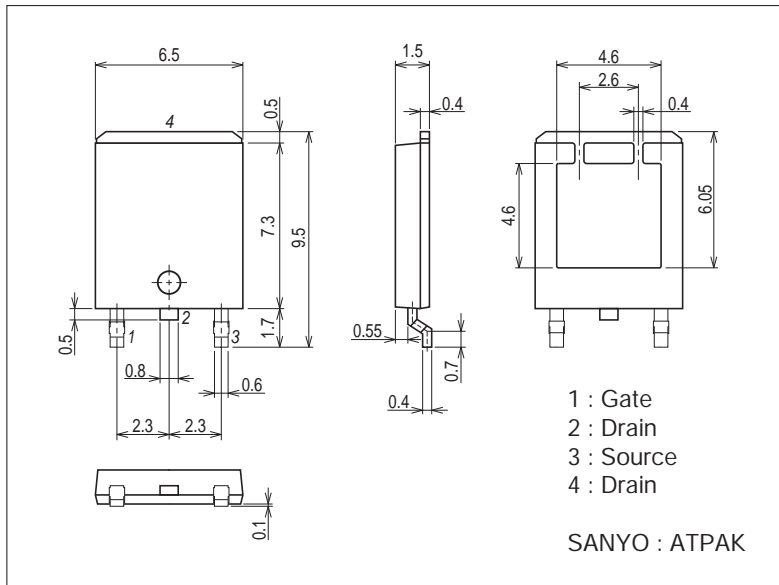
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-14A$		32		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=-14A, V_{GS}=-10V$		57	75	$m\Omega$
Input Capacitance	Ciss	$V_{DS}=-20V, f=1MHz$		4000		pF
Output Capacitance	Coss	$V_{DS}=-20V, f=1MHz$		270		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-20V, f=1MHz$		150		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		32		ns
Rise Time	t_r	See specified Test Circuit.		130		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		330		ns
Fall Time	t_f	See specified Test Circuit.		190		ns
Total Gate Charge	Qg	$V_{DS}=-60V, V_{GS}=-10V, I_D=-28A$		73		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-60V, V_{GS}=-10V, I_D=-28A$		16		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-60V, V_{GS}=-10V, I_D=-28A$		14		nC
Diode Forward Voltage	VSD	$I_S=-28A, V_{GS}=0V$		-1.0	-1.5	V

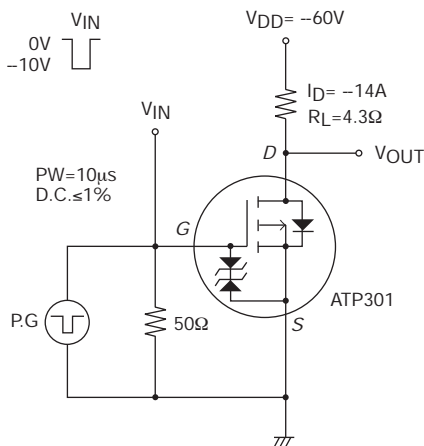
Package Dimensions

unit : mm (typ)

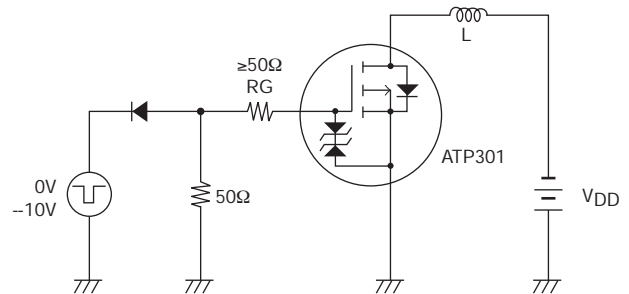
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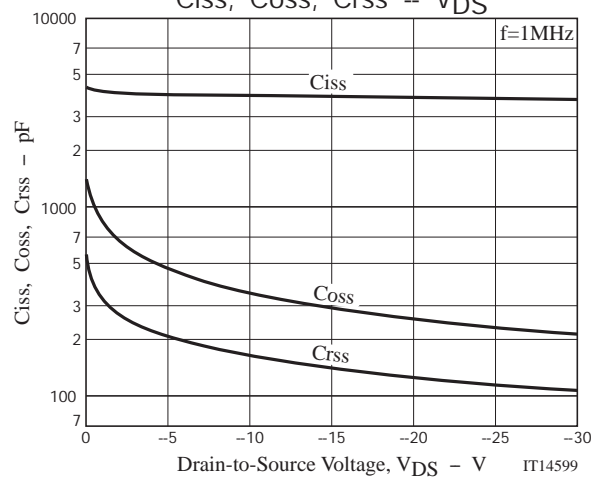
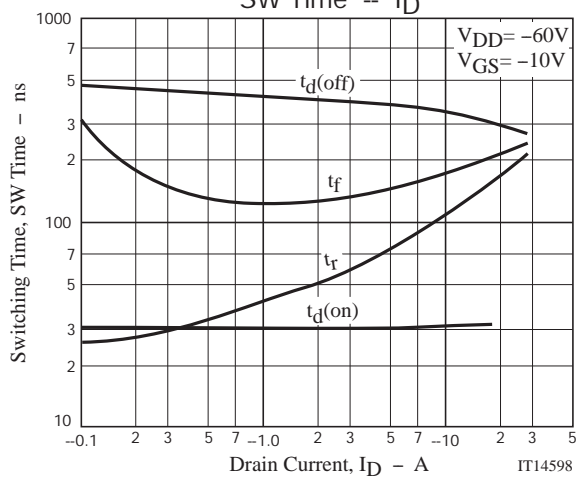
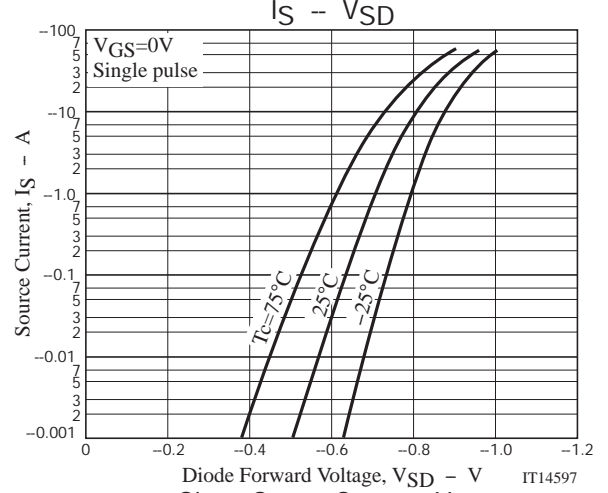
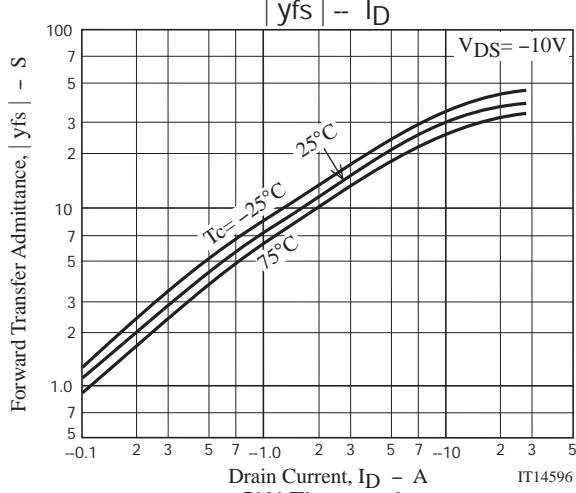
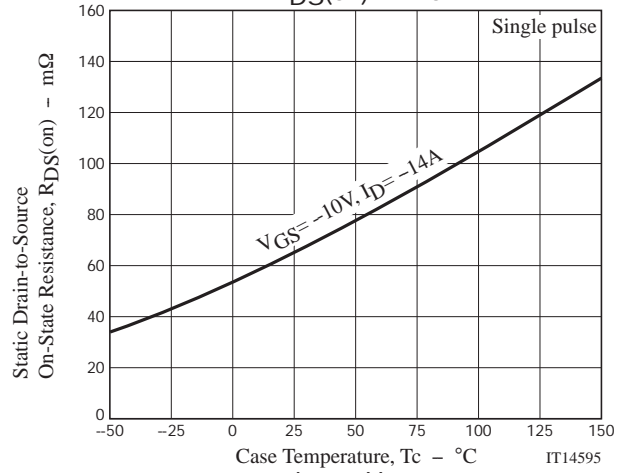
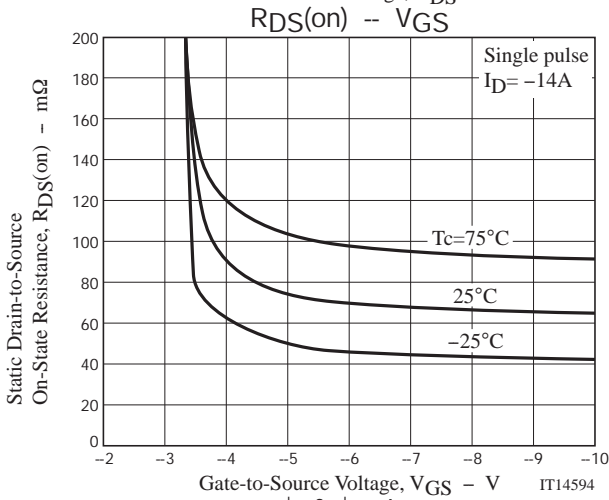
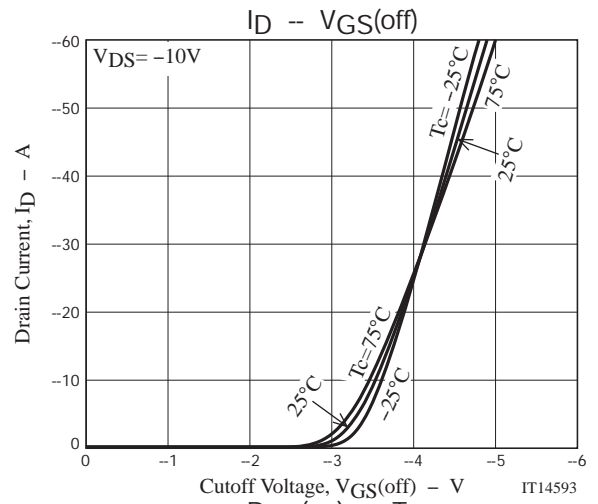
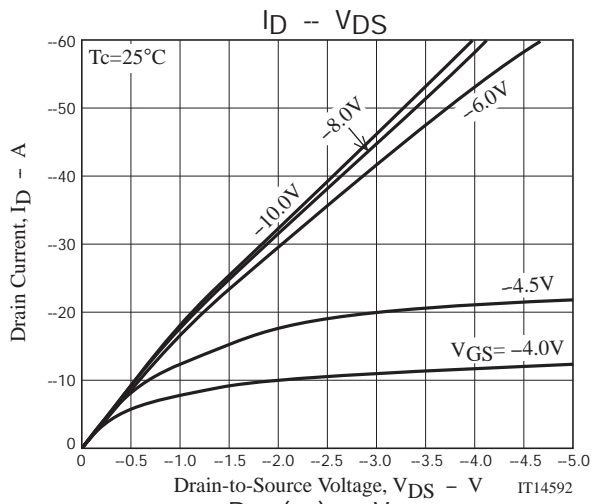


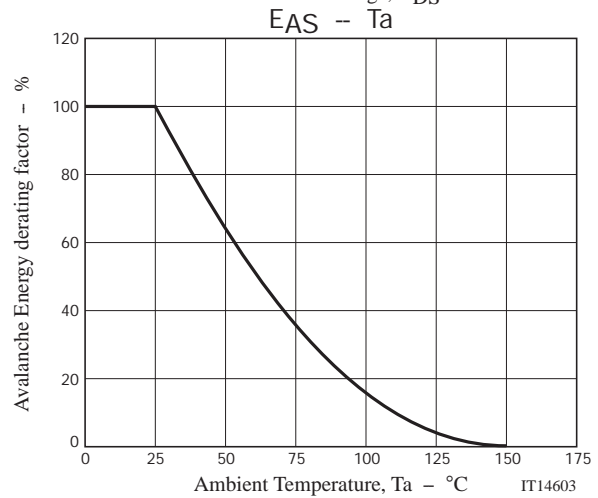
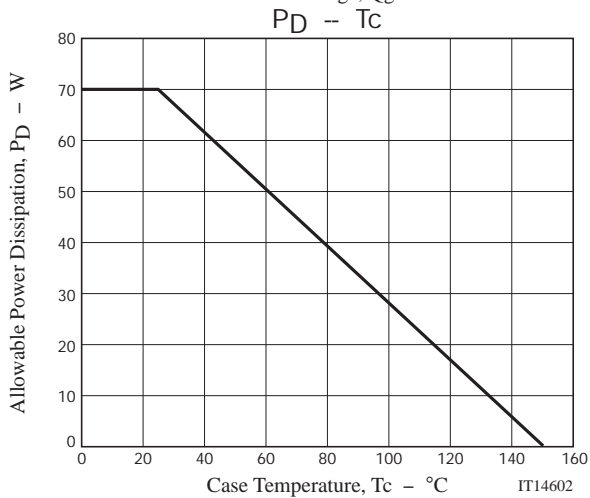
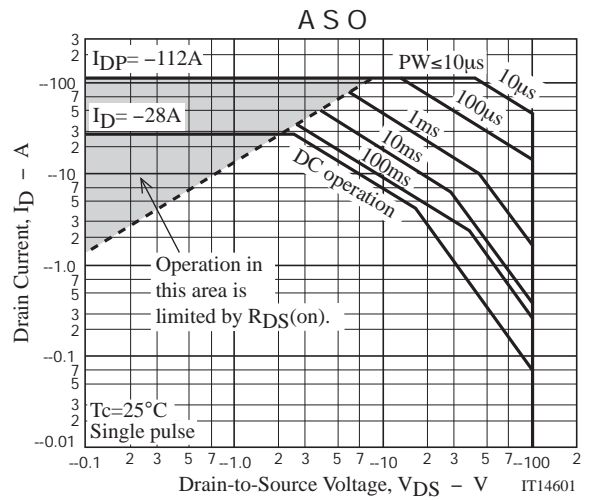
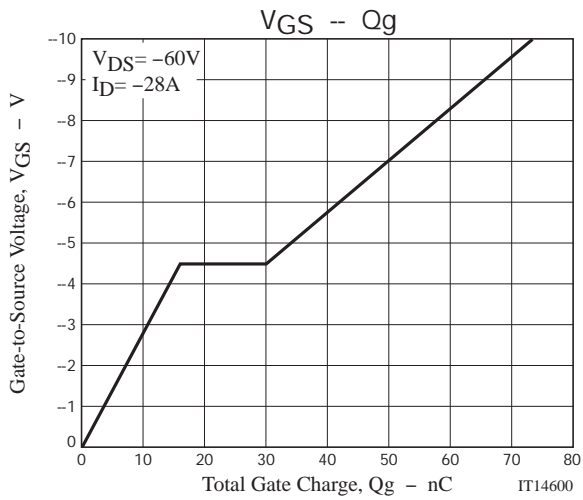
Switching Time Test Circuit



Avalanche Resistance Test Circuit







Note on usage : Since the ATP301 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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