



P-Channel Silicon MOSFET

ATP102 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Large current.
- Slim package.
- 4.5V drive.
- Halogen free compliance.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-30	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		-40	A
Drain Current (PW≤10μs)	I _{DP}	PW≤10μs, duty cycle≤1%	-120	A
Allowable Power Dissipation	P _D	T _c =25°C	40	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E _{AS}		58	mJ
Avalanche Current *2	I _{AV}		20	A

Note : *1 V_{DD}=10V, L=200μH, I_{AV}=20A

*2 L≤200μH, 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	-30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA

Marking : ATP102

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ATP102

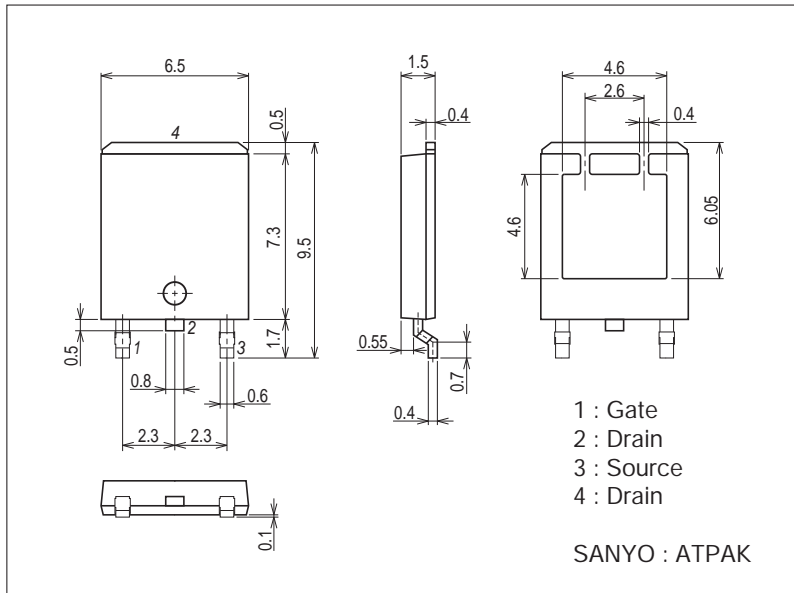
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10V, I_D=-1mA$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-20A$		29		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-20A, V_{GS}=-10V$		14	18.5	$m\Omega$
	$R_{DS(on)2}$	$I_D=-10A, V_{GS}=-4.5V$		22	31	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-10V, f=1MHz$		1490		μF
Output Capacitance	C_{oss}	$V_{DS}=-10V, f=1MHz$		360		μF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-10V, f=1MHz$		270		μF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		11		ns
Rise Time	t_r	See specified Test Circuit.		135		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		135		ns
Fall Time	t_f	See specified Test Circuit.		185		ns
Total Gate Charge	Q_g	$V_{DS}=-15V, V_{GS}=-10V, I_D=-40A$		34		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-15V, V_{GS}=-10V, I_D=-40A$		4.2		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-15V, V_{GS}=-10V, I_D=-40A$		11.5		nC
Diode Forward Voltage	V_{SD}	$I_S=-40A, V_{GS}=0V$		-0.99	-1.5	V

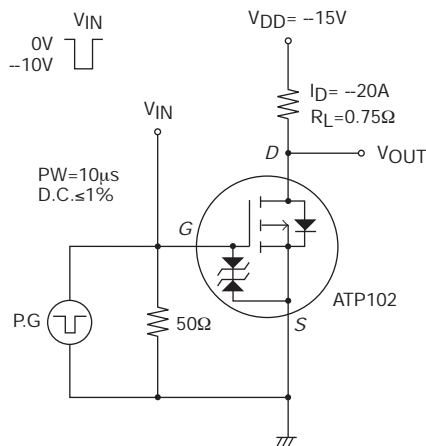
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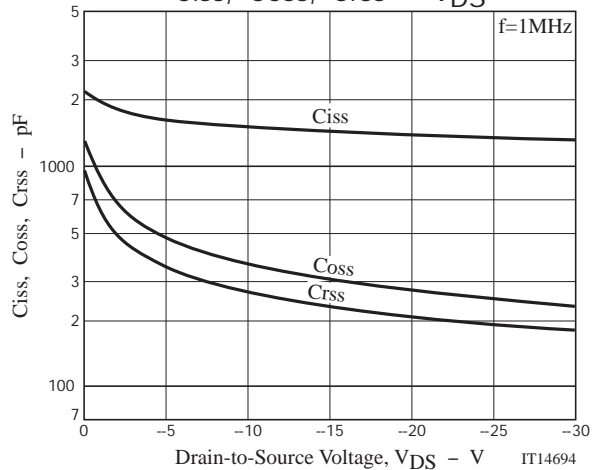
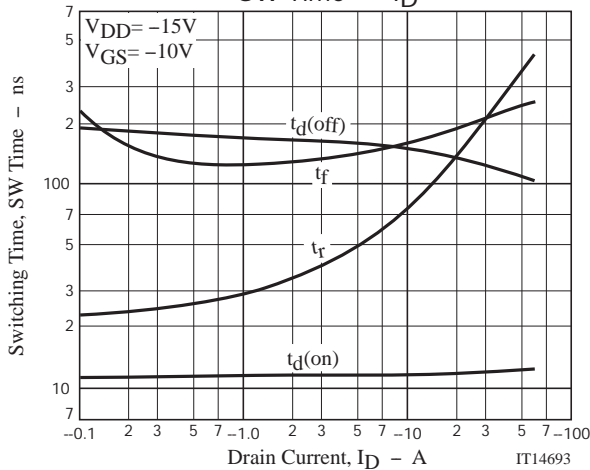
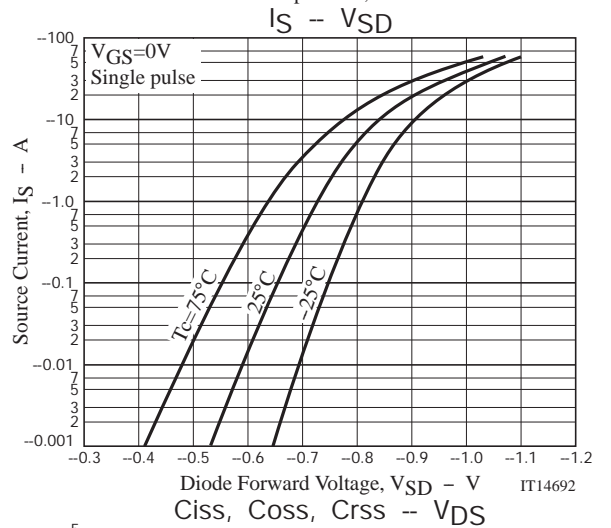
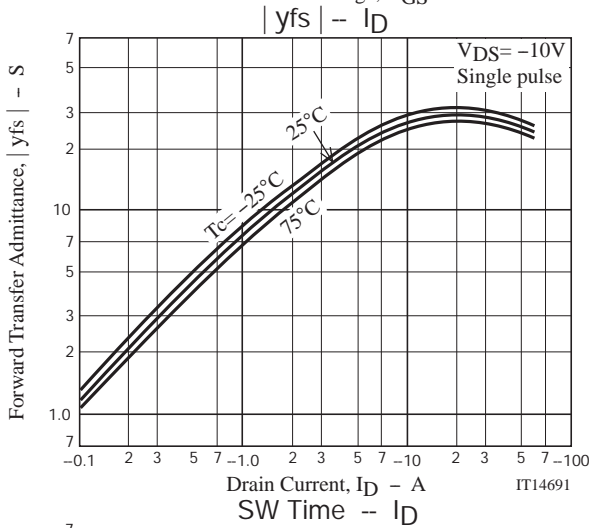
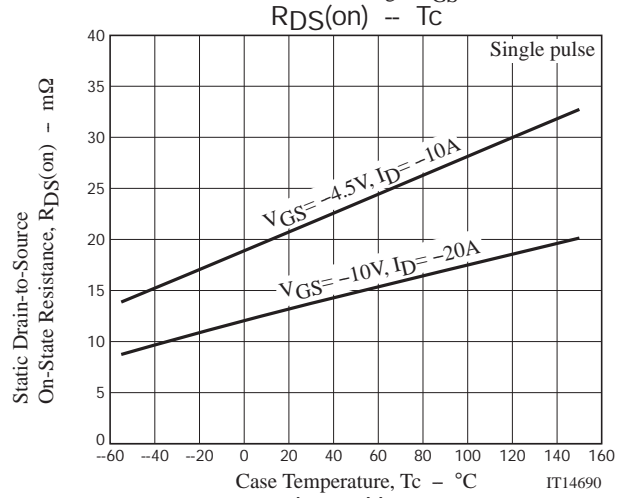
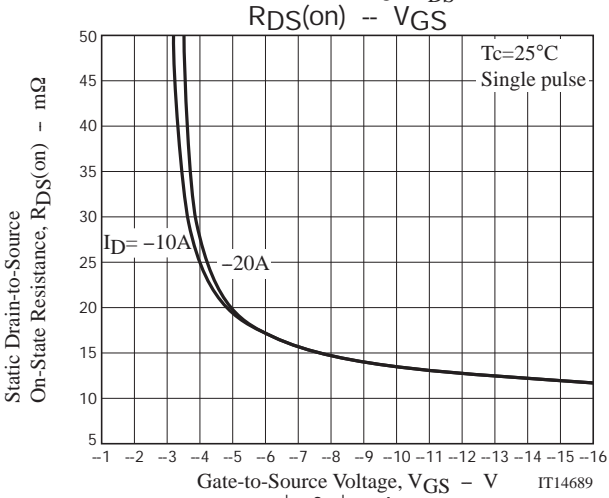
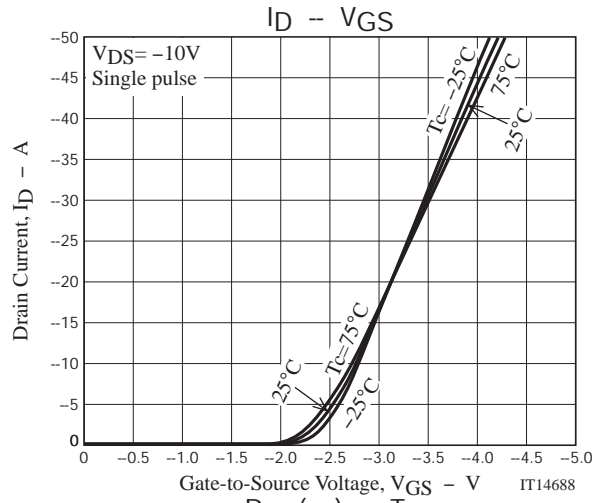
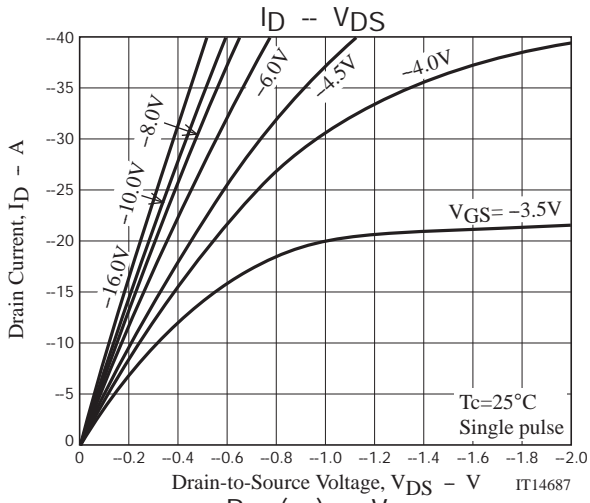
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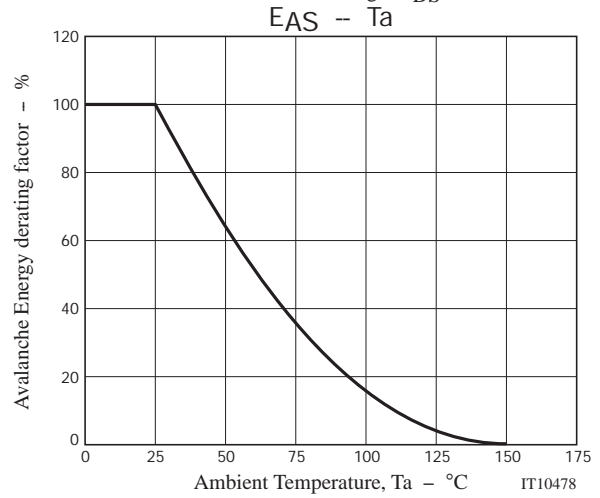
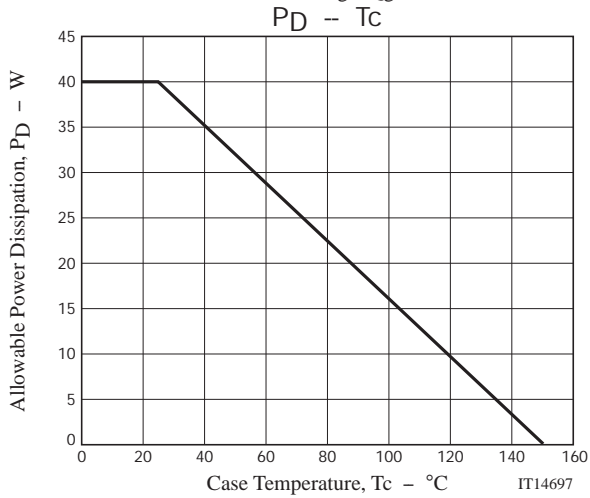
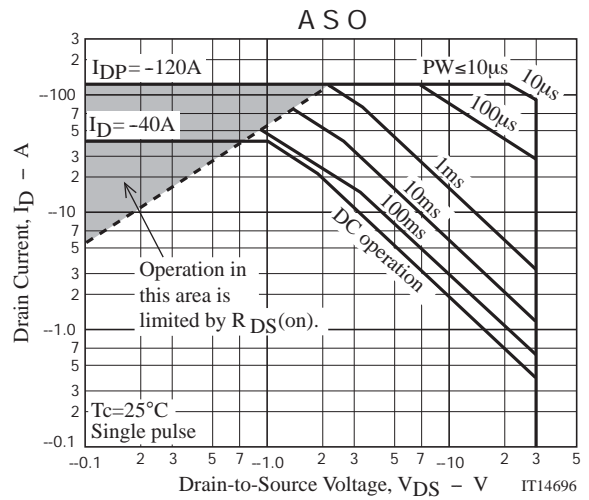
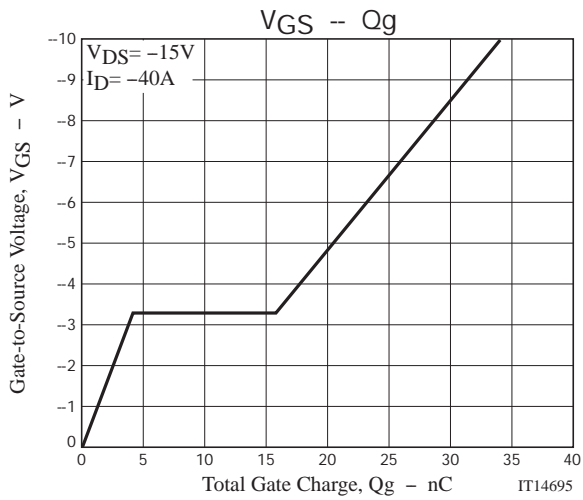
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Switching Time Test Circuit







Note on usage : Since the ATP102 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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