



P-Channel Silicon MOSFET

ATP103 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Large current.
- Slim package.
- 4.5V 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}		-30	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		-55	A
Drain Current ($PW \leq 10\mu\text{s}$)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-165	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}		57	mJ
Avalanche Current *2	I_{AV}		-28	A

Note : *1 $V_{DD}=-10\text{V}$, $L=100\mu\text{H}$, $I_{AV}=-28\text{A}$ *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	$V_{(BR)DSS}$	$I_D=-1\text{mA}$, $V_{GS}=0\text{V}$	-30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30\text{V}$, $V_{GS}=0\text{V}$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0\text{V}$			± 10	μA

Marking : ATP103

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ATP103

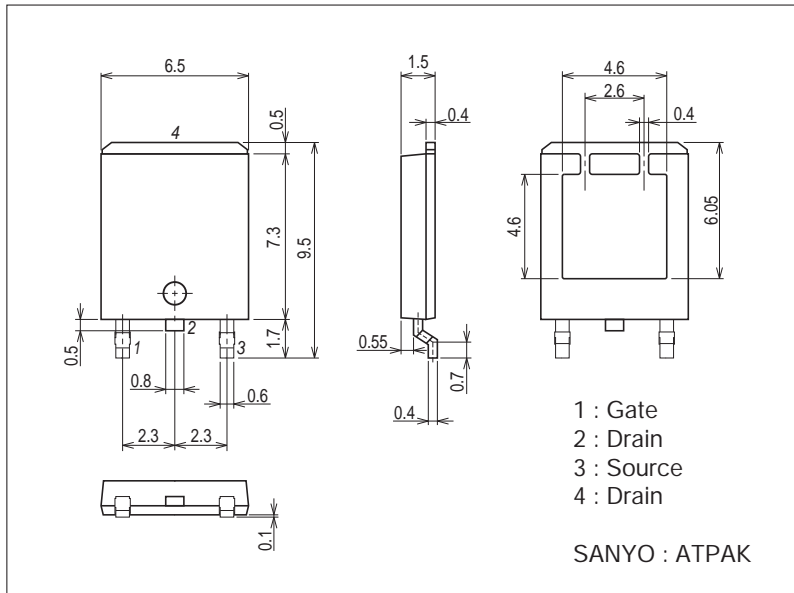
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10V, I_D=-1mA$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-28A$		45		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-28A, V_{GS}=-10V$		10	13	$m\Omega$
	$R_{DS(on)2}$	$I_D=-14A, V_{GS}=-4.5V$		14.5	20.5	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-10V, f=1MHz$		2430		pF
Output Capacitance	C_{oss}	$V_{DS}=-10V, f=1MHz$		555		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-10V, f=1MHz$		395		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		19		ns
Rise Time	t_r	See specified Test Circuit.		400		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		150		ns
Fall Time	t_f	See specified Test Circuit.		145		ns
Total Gate Charge	Q_g	$V_{DS}=-15V, V_{GS}=-10V, I_D=-55A$		47		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-15V, V_{GS}=-10V, I_D=-55A$		10		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-15V, V_{GS}=-10V, I_D=-55A$		8.7		nC
Diode Forward Voltage	V_{SD}	$I_S=-55A, V_{GS}=0V$		-1.03	-1.5	V

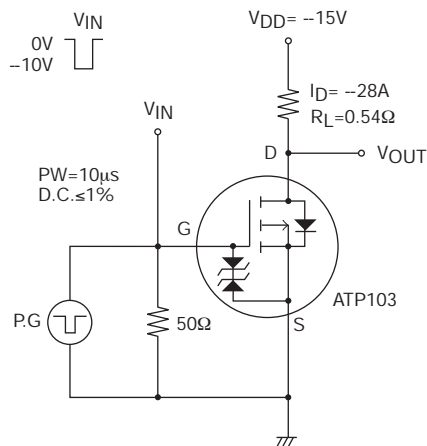
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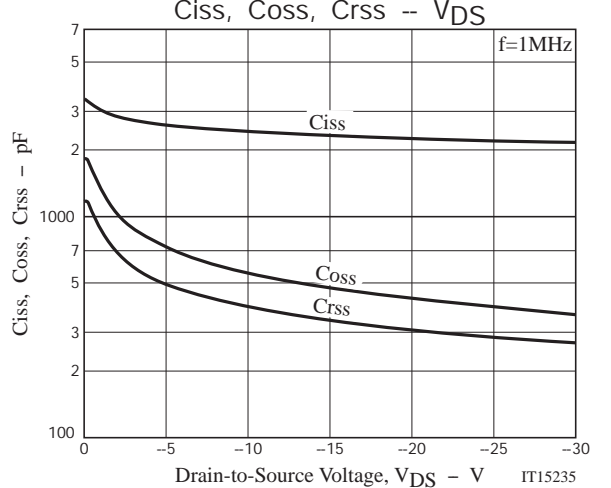
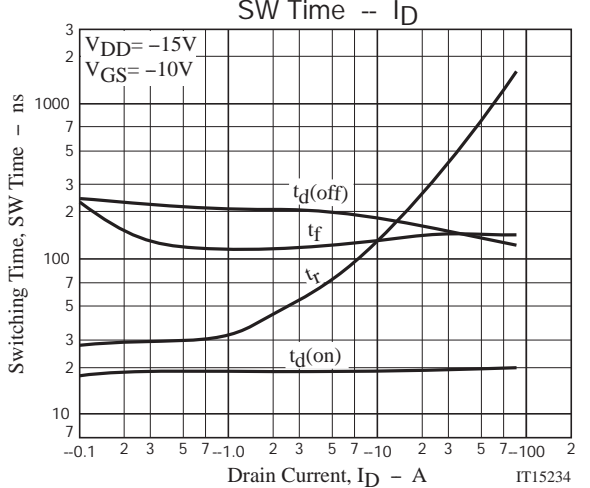
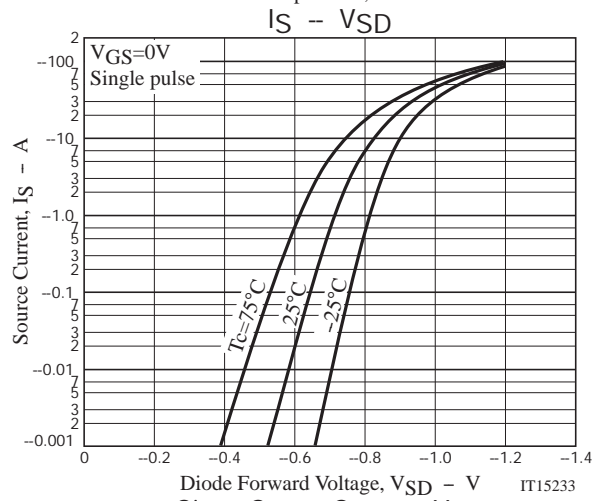
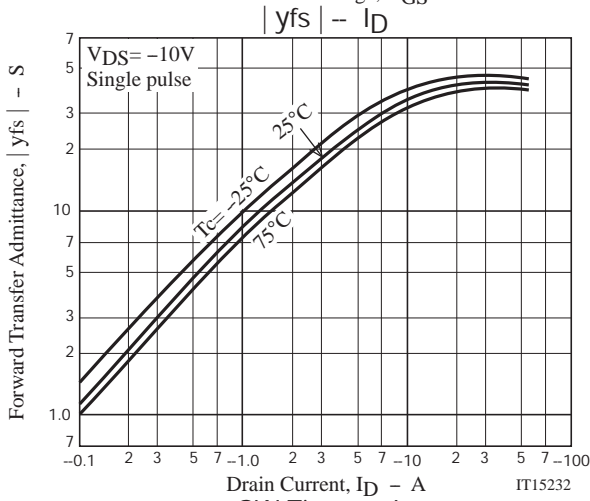
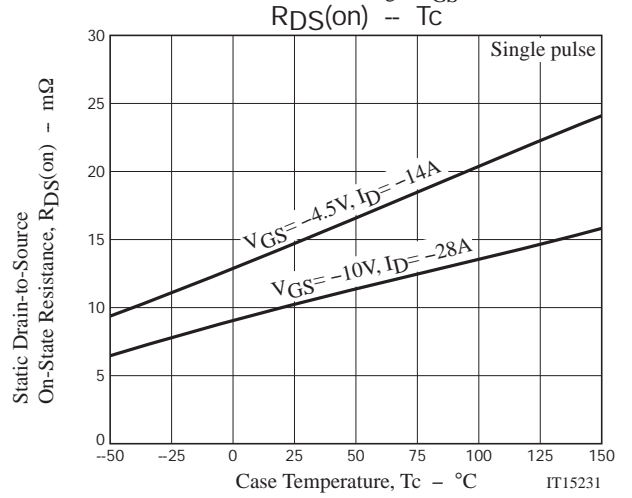
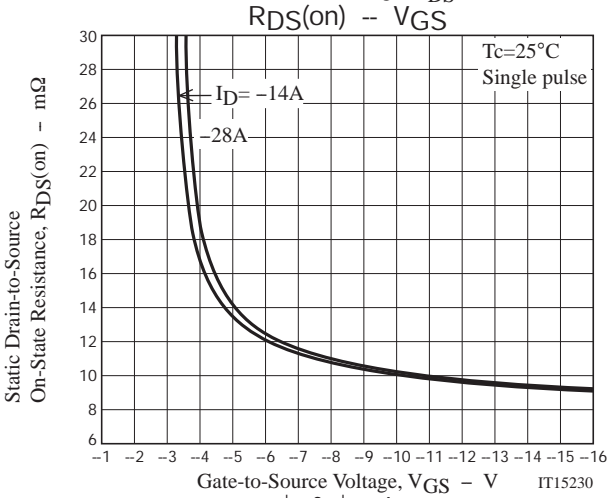
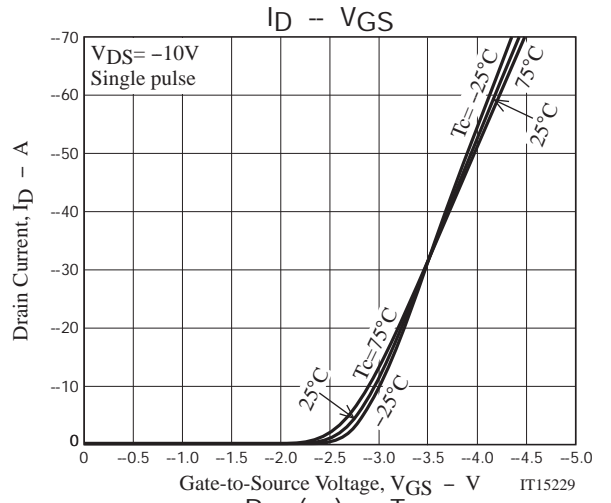
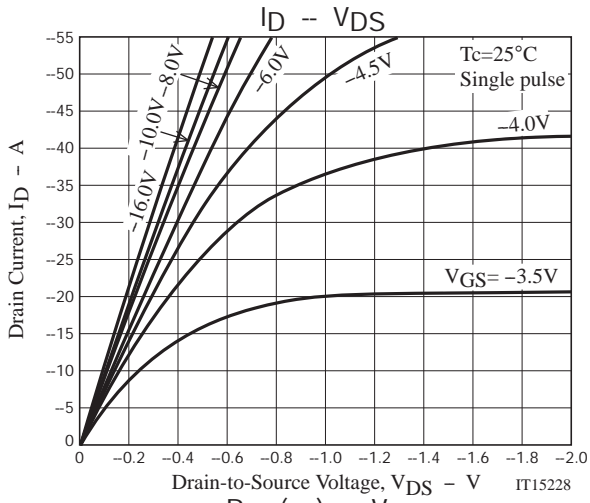
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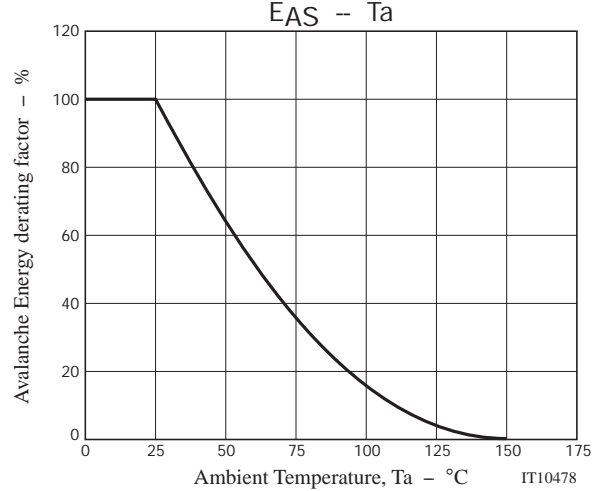
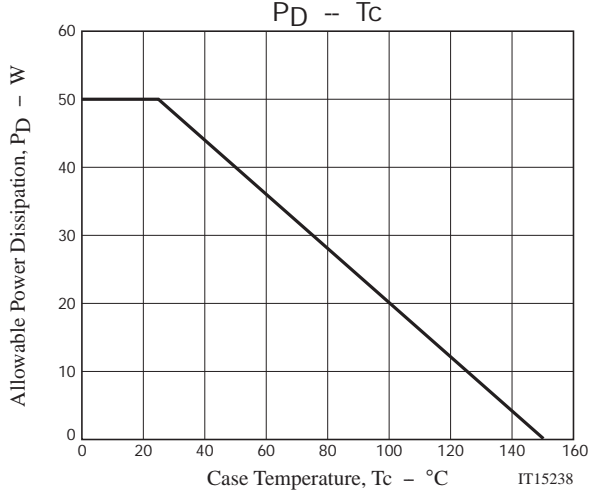
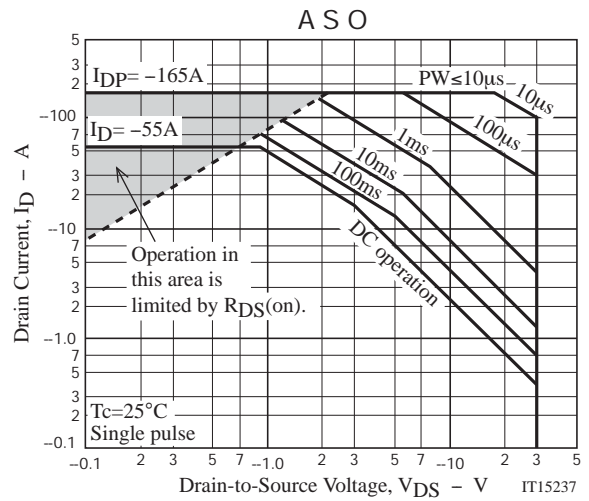
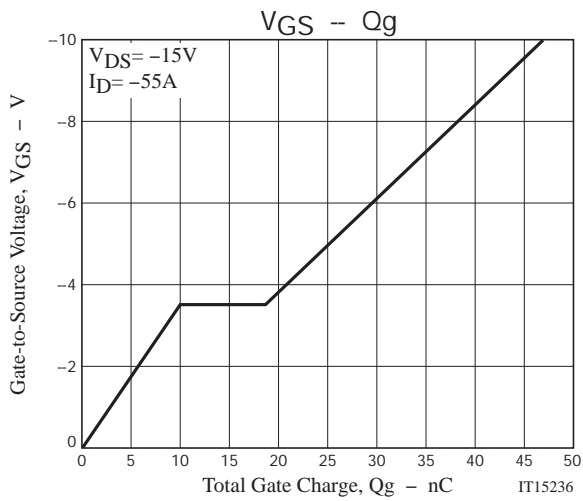
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Switching Time Test Circuit







Note on usage : Since the ATP103 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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