



ATP404

N-Channel Power MOSFET 60V, 95A, 7.2mΩ, ATPAK

ON Semiconductor®

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Features

- ON-resistance $R_{DS(on)1}=5.5m\Omega$ (typ.)
- 4.5V drive
- Input capacitance $C_{iss}=6400pF$ (typ.)
- Halogen free compliance

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		60	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		95	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	380	A
Allowable Power Dissipation	P_D	$T_c=25^\circ C$	70	W
Channel Temperature	T_{ch}		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$
Avalanche Energy (Single Pulse) *1	E_{AS}		214	mJ
Avalanche Current *2	I_{AV}		48	A

Note : *1 $V_{DD}=30V$, $L=100\mu H$, $I_{AV}=48A$

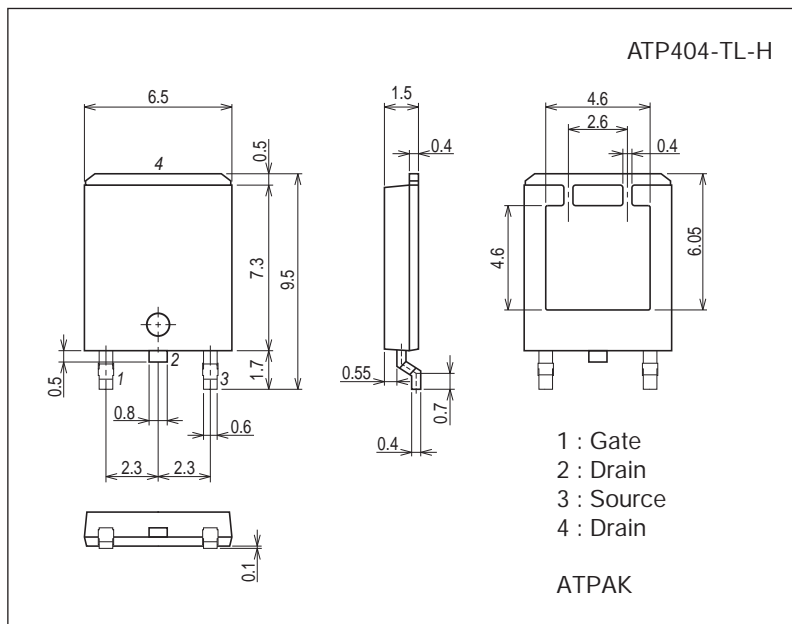
*2 $L \leq 100\mu H$, Single pulse

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

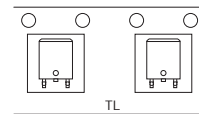
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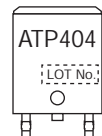
Product & Package Information

- Package : ATPAK
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

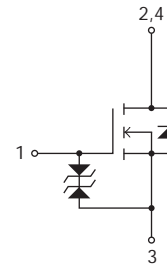
Packing Type: TL



Marking



Electrical Connection

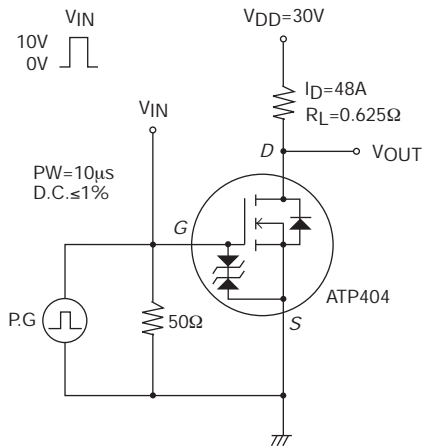


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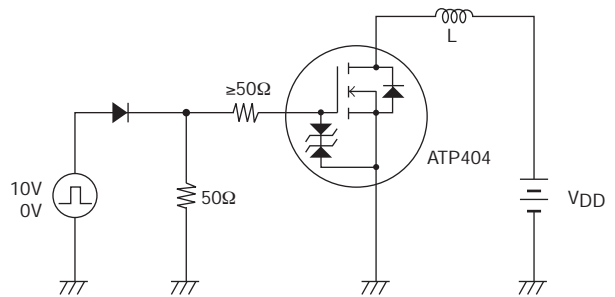
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D =1mA, V _{GS} =0V	60			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, 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	1.2		2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =48A		100		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =48A, V _{GS} =10V		5.5	7.2	mΩ
	R _{DS(on)2}	I _D =48A, V _{GS} =4.5V		7.5	10.5	mΩ
Input Capacitance	C _{iss}	V _{DS} =20V, f=1MHz		6400		pF
Output Capacitance	C _{oss}			490		pF
Reverse Transfer Capacitance	C _{rss}			380		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		53		ns
Rise Time	t _r			640		ns
Turn-OFF Delay Time	t _{d(off)}			380		ns
Fall Time	t _f			520		ns
Total Gate Charge	Q _g				120	
Gate-to-Source Charge	Q _{gs}	V _{DS} =30V, V _{GS} =10V, I _D =95A		25		nC
Gate-to-Drain "Miller" Charge	Q _{gd}			25		nC
Diode Forward Voltage	V _{SD}		I _S =95A, V _{GS} =0V		0.95	1.2

Switching Time Test Circuit

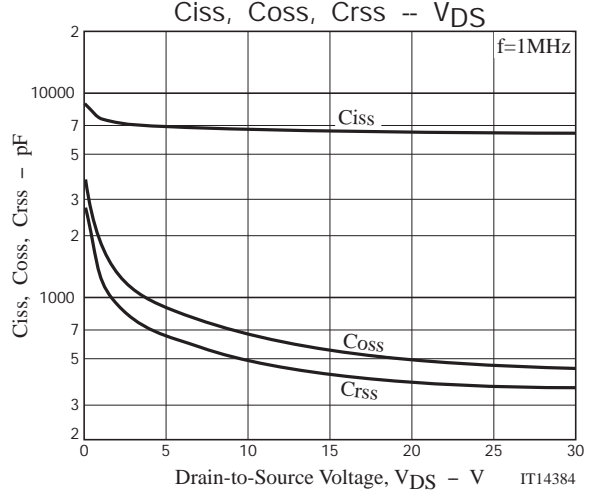
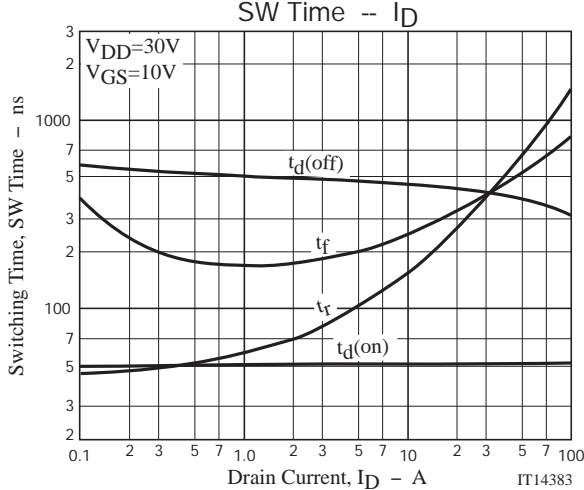
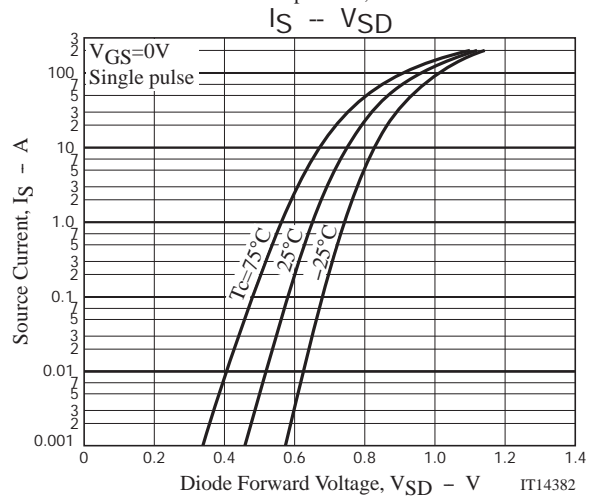
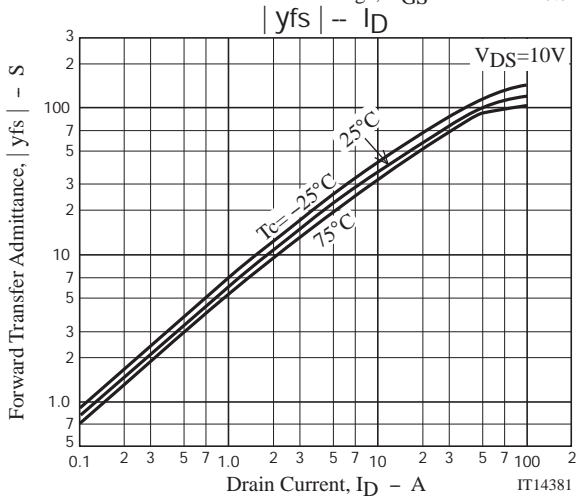
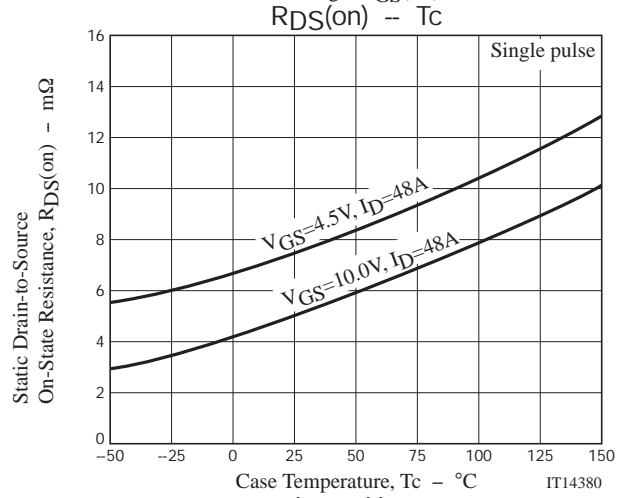
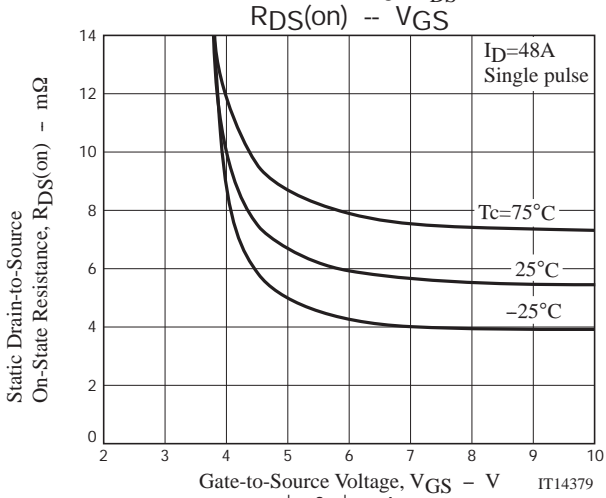
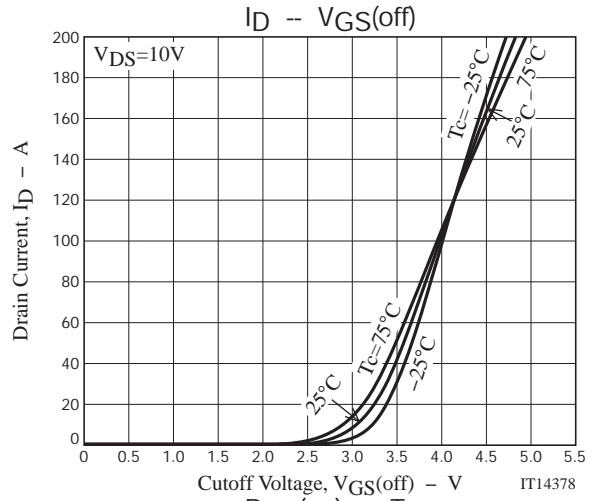
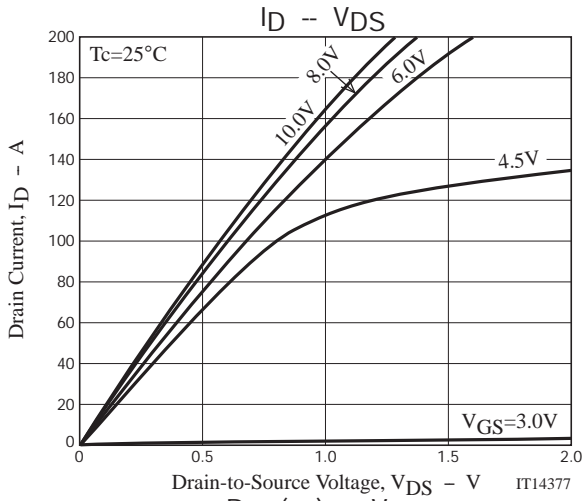


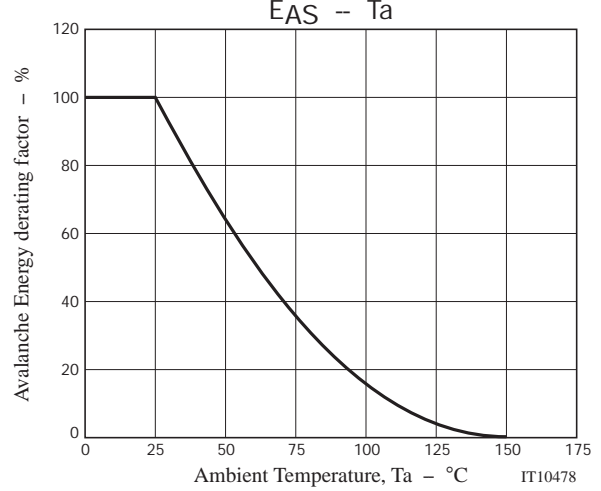
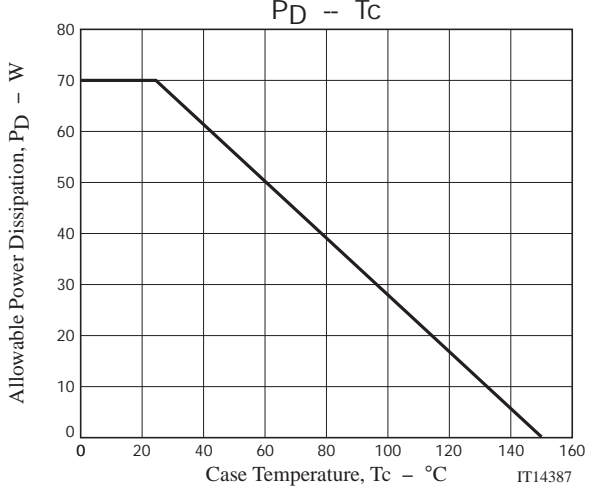
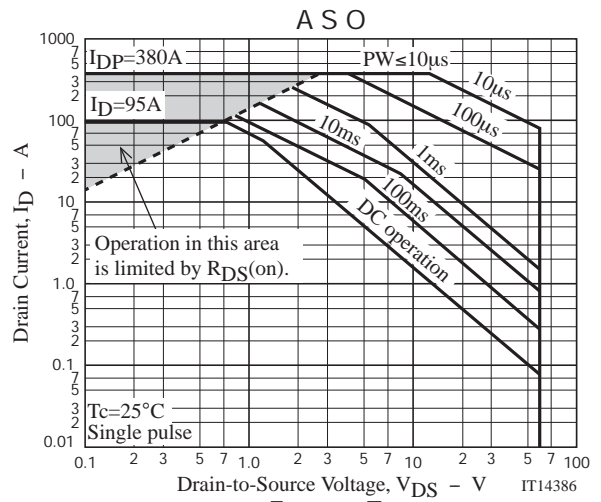
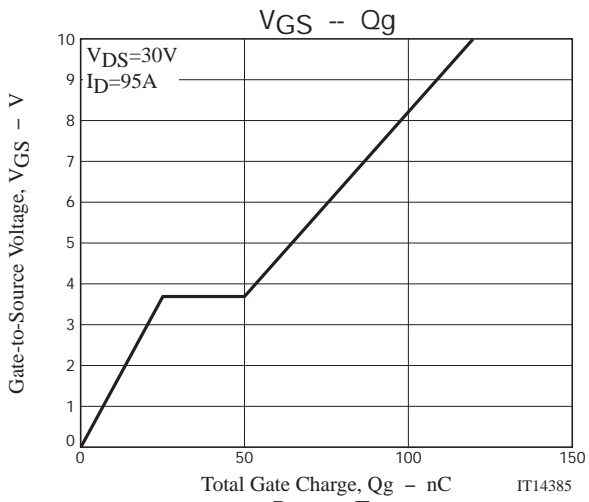
Avalanche Resistance Test Circuit



Ordering Information

Device	Package	Shipping	memo
ATP404-TL-H	ATPAK	3,000pcs./reel	Pb Free and Halogen Free





Note on usage : Since the ATP404 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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