

DESCRIPTION

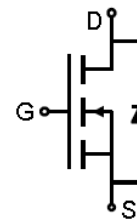
The 3426 uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. This device is suitable for use as a load switch or in PWM applications.

GENERAL FEATURES

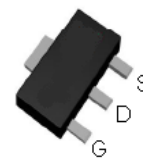
- $R_{DS(ON)} < 13\text{m}\Omega$ @ $V_{GS}=4.5\text{V}$
 $R_{DS(ON)} < 10\text{m}\Omega$ @ $V_{GS}=10\text{V}$
- High Power and current handling capability
- Lead free product is acquired
- Surface Mount Package

Application

- PWM applications
- Load switch
- Power management



Schematic diagram



Top View SOT-89

■ Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	30	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	$T_C=25^\circ\text{C}$	30
		$T_C=100^\circ\text{C}$	21
Pulsed Drain Current ^A	I_{DM}	100	A
Total Power Dissipation	P_D	$T_C=25^\circ\text{C}$	5
		$T_C=100^\circ\text{C}$	1.5
Single Pulse Avalanche Energy ^B	E_{AS}	128	mJ
Thermal Resistance Junction-to-Case ^C	$R_{\theta JC}$	7.5	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+175	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	T _J =25°C		1	μA
			T _J =55°C		5	
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	1.0	1.5	2.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D =15A		8.0	10	mΩ
		V _{GS} = 4.5V, I _D =15A		10	13	
Diode Forward Voltage	V _{SD}	I _S =15A, V _{GS} =0V		0.85	1.2	V
Maximum Body-Diode Continuous Current	I _S				30	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHZ		1020		pF
Output Capacitance	C _{oss}			225		
Reverse Transfer Capacitance	C _{rss}			126		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =15V, I _D =30A		28		nC
Gate-Source Charge	Q _{gs}			7		
Gate-Drain Charge	Q _{gd}			5		
Reverse Recovery Charge	Q _{rr}	I _F =15A, di/dt=100A/us		25		nC
Reverse Recovery Time	t _{rr}			26		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =20V, I _D =2A, R _L =1Ω R _{GEN} =3Ω		8		ns
Turn-on Rise Time	t _r			15		
Turn-off Delay Time	t _{D(off)}			27		
Turn-off fall Time	t _f			7		

A. Pulse Test: Pulse Width ≤300us, Duty cycle ≤2%.

B. T_J=25°C, V_{DD}=20V, V_G=10V, L=0.5mH, R_g=25 Ω

C. R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case thermal reference is defined as the solder mounting surface of the drain pins. R_{θJC} is guaranteed by design, while R_{θJA} is determined by the board design. The maximum rating presented here is based on mounting on a 1 in 2 pad of 2oz copper.

■ Typical Performance Characteristics

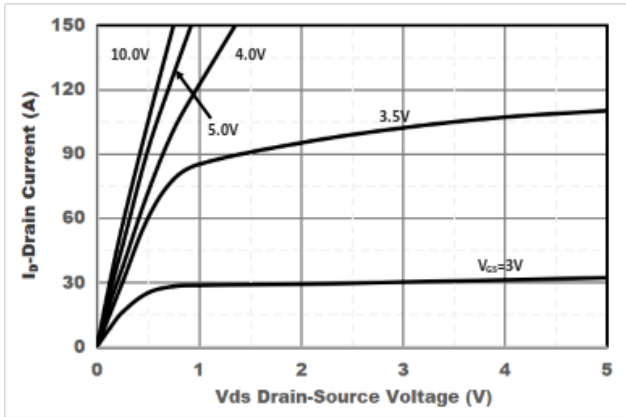


Figure1. Output Characteristics

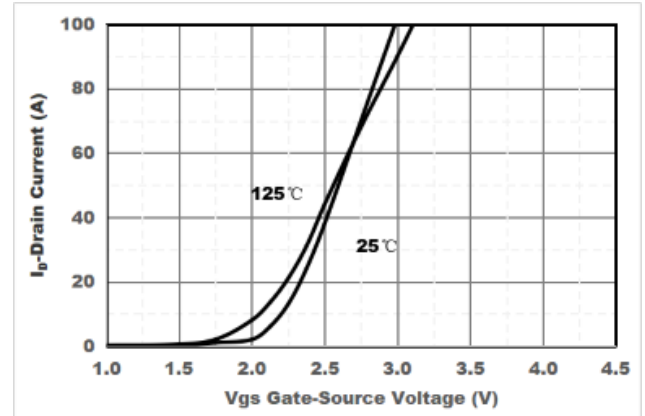


Figure2. Transfer Characteristics

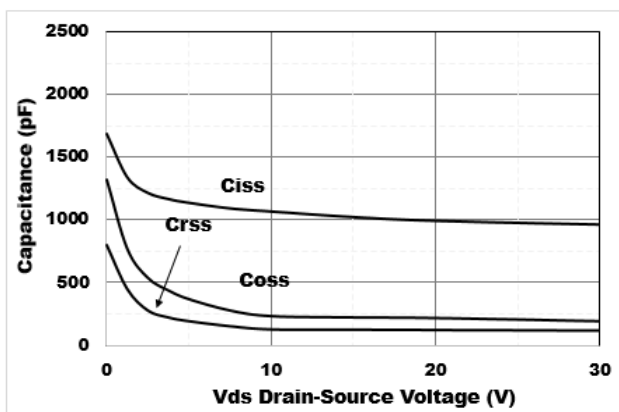


Figure3. Capacitance Characteristics

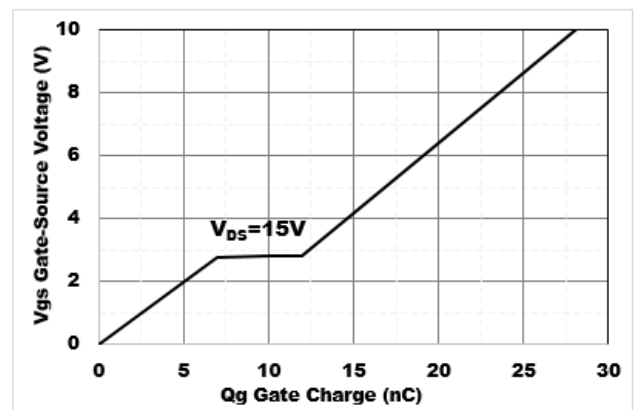


Figure4. Gate Charge

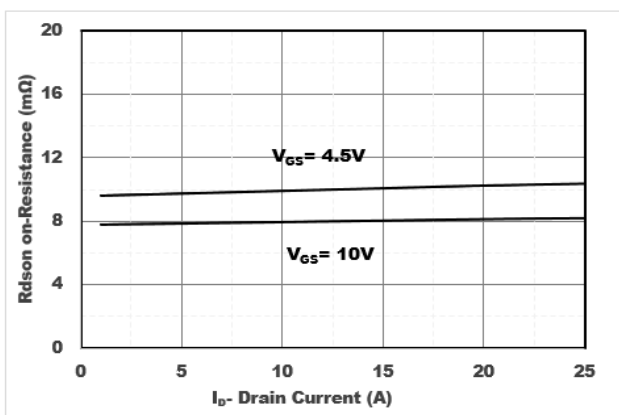


Figure5. Drain-Source on Resistance

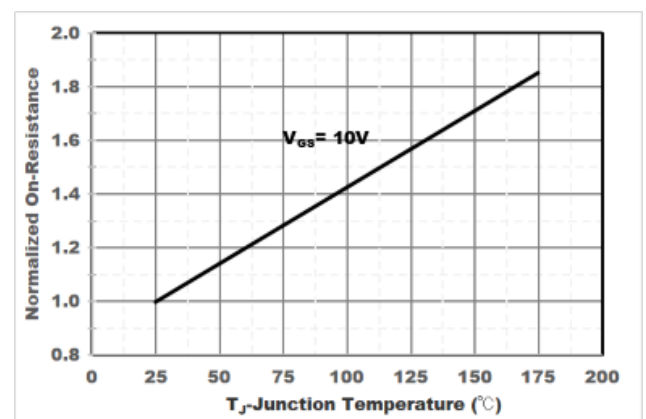


Figure6. Drain-Source on Resistance

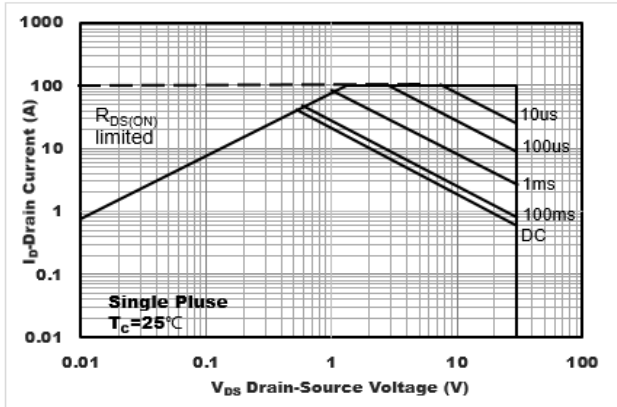


Figure7. Safe Operation Area

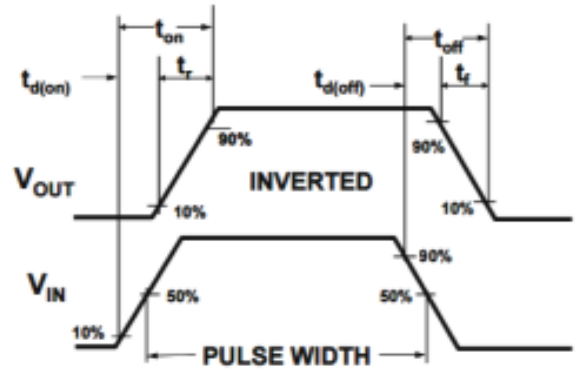
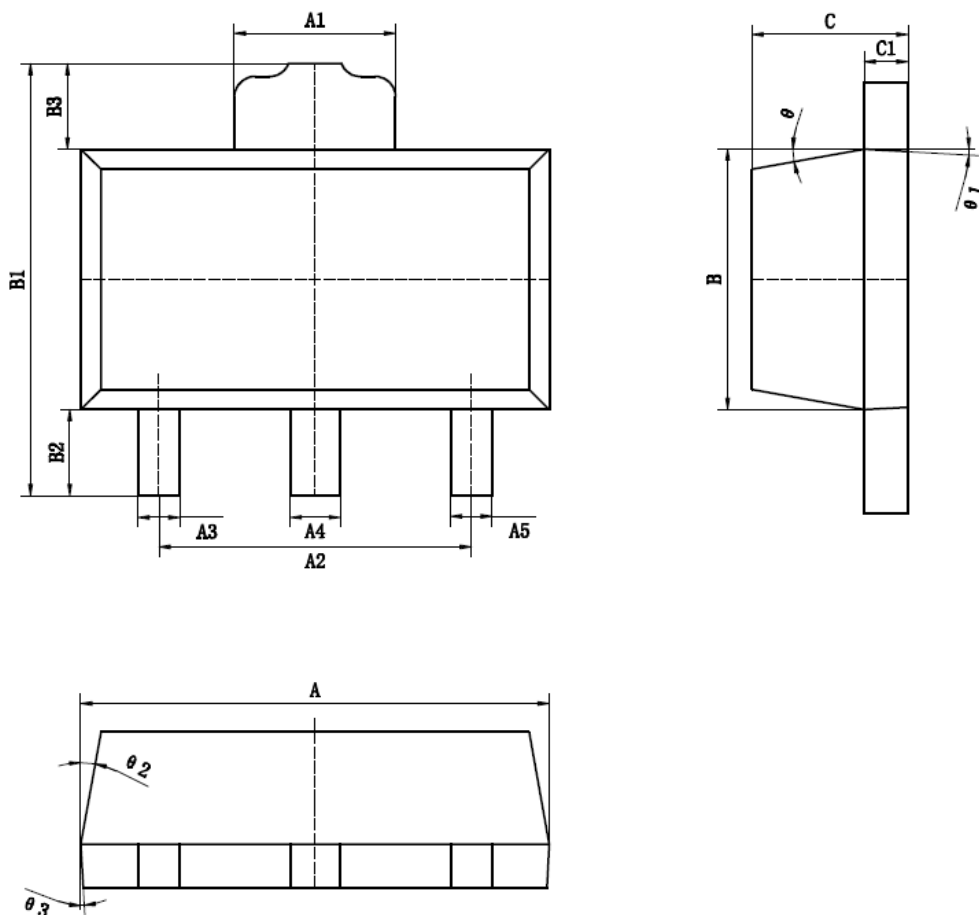


Figure8. Switching wave

Package Information

SOT89-3 Package



标注	尺寸	最小 (mm)	最大 (mm)	标注	尺寸	最小 (mm)	最大 (mm)
A		4.40	4.60	B3		0.82	0.83
A1		1.65	1.75	C		1.40	1.60
A2		2.95	3.05	C1		0.35	0.45
A3		0.35	0.45	θ		6° TYP4	
A4		0.43	0.53	$\theta 1$		3° TYP4	
A5		0.35	0.45	$\theta 2$		6° TYP4	
B		2.40	2.60	$\theta 3$		3° TYP4	
B1		4.05	4.25				
B2		0.82	0.83				