

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
100V	240mΩ@10V	2A
	280mΩ@4.5V	

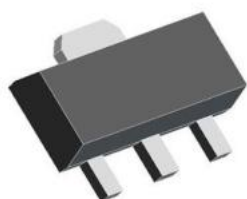
Feature

- High power and current handling capability
- Surface mount package

Application

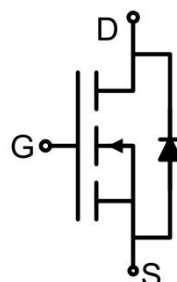
- Battery Switch
- DC-DC Converters

Package

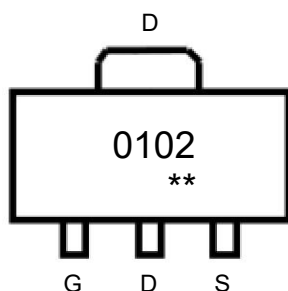


SOT-89

Circuit diagram



Marking



Absolute maximum ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current	I_{DM}	8	A
Power Dissipation	P_D	1.5	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

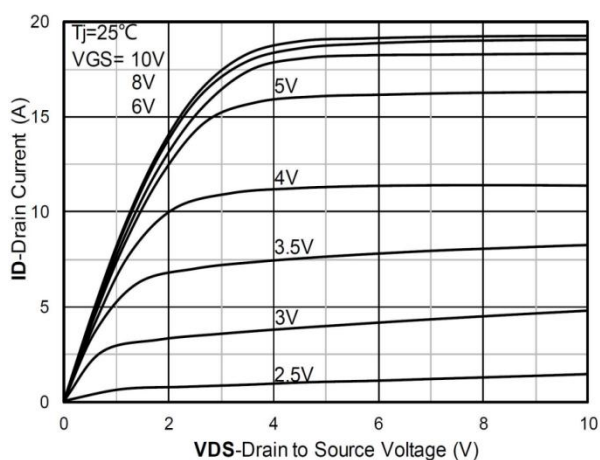
Electrical characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	100			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =80V,V _{GS} = 0V			1	μA
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	2.1	3	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =1.4A		210	240	mΩ
		V _{GS} =4.5V, I _D =1.3A		230	280	
Dynamic characteristics ¹⁾						
Input Capacitance	C _{iss}	V _{DS} =50V,V _{GS} =0V,f =1MHz		385		pF
Output Capacitance	C _{oss}			30		
Reverse Transfer Capacitance	C _{rss}			26		
Total Gate Charge	Q _g	V _{DS} =50V,V _{GS} =10V,I _D =2A		8.6		nC
Gate-Source Charge	Q _{gs}			1.3		
Gate-Drain Charge	Q _{gd}			1.7		
Turn-on delay time	t _{d(on)}	V _{DD} =50V,V _{GS} =10V,I _D =1.3A R _G =1Ω		5		nS
Turn-on rise time	t _r			18		
Turn-off delay time	t _{d(off)}			13		
Turn-off fall time	t _f			29		
Source-Drain Diode characteristics						
Diode Forward Current	I _S				2	A
Diode Forward voltage	V _{SD}	V _{GS} =0V, I _S =1A,T _J =25℃			1.2	V

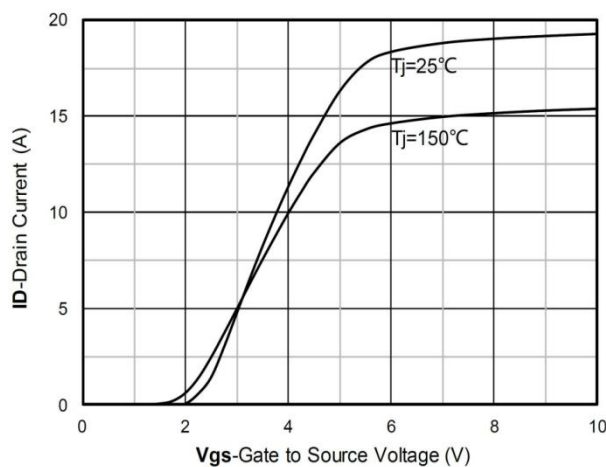
Notes:

1) Guaranteed by design, not subject to production testing.

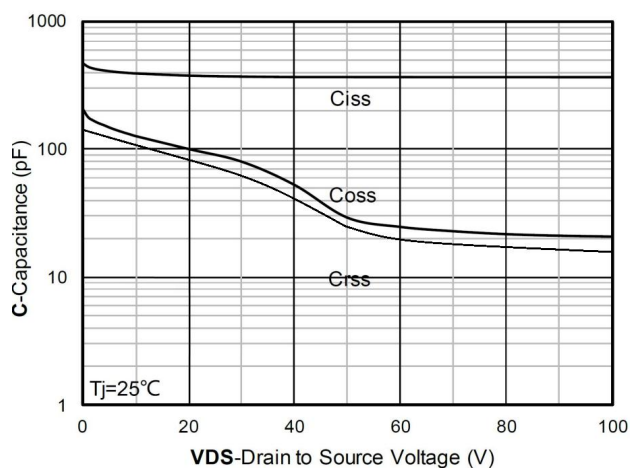
Typical Characteristics



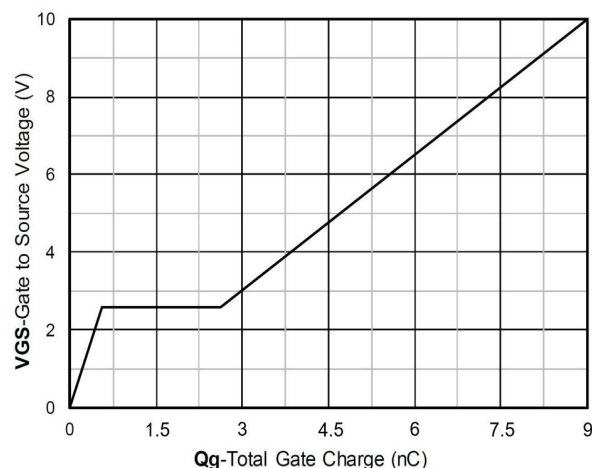
Output Characteristics



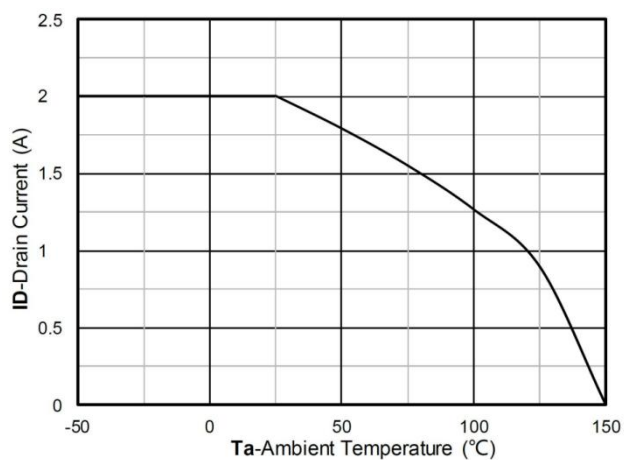
Transfer Characteristics



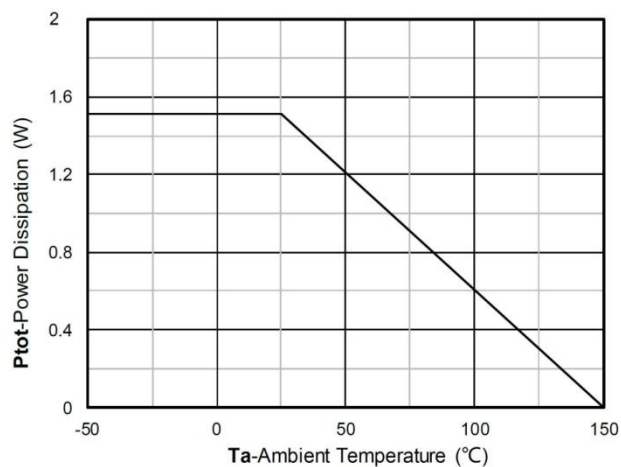
Capacitance Characteristics



Gate Charge

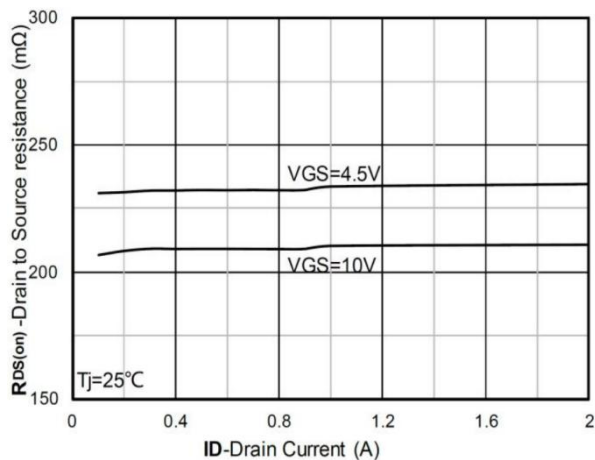


Current dissipation

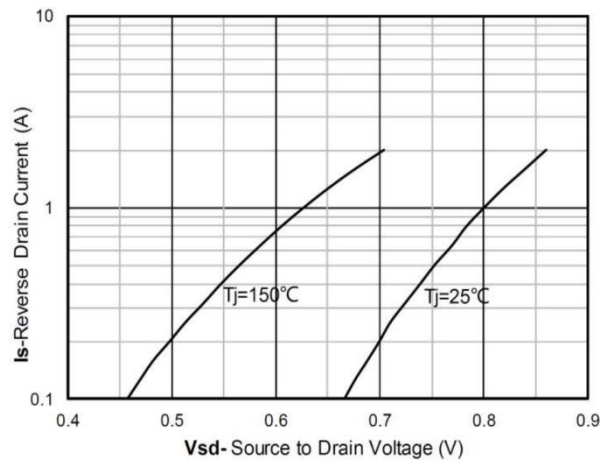


Power dissipation

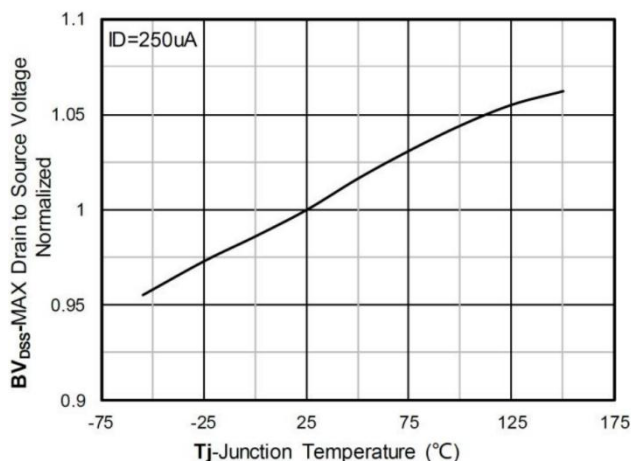
Typical Characteristics



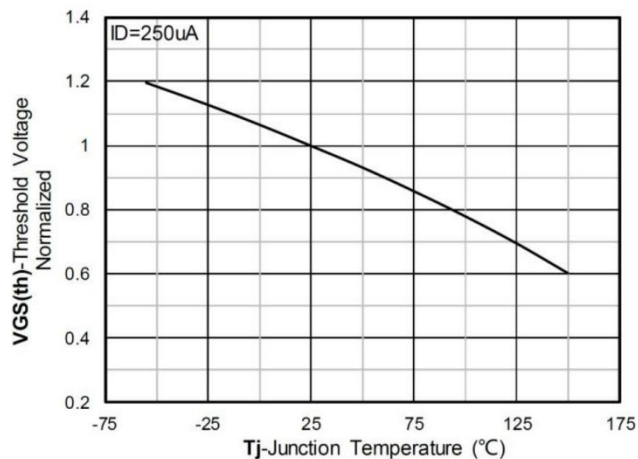
$R_{DS(on)}$ VS Drain Current



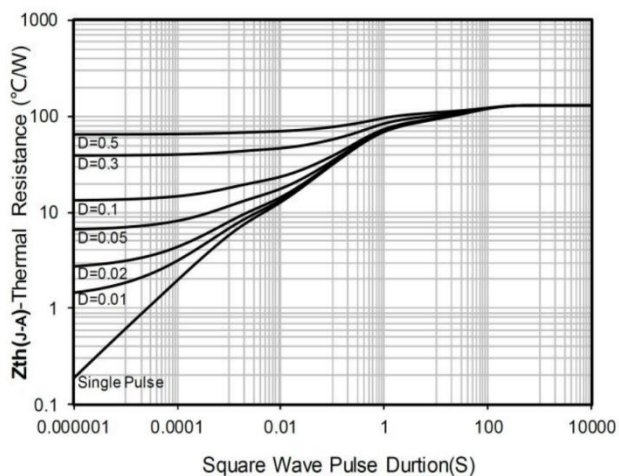
Forward characteristics of reverse diode



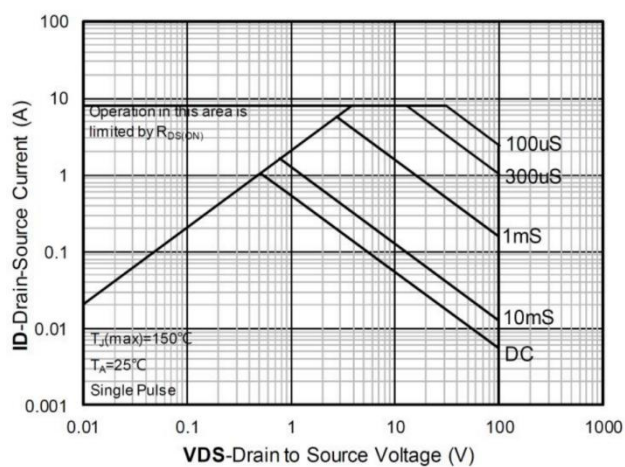
Normalized breakdown voltage



Normalized Threshold voltage

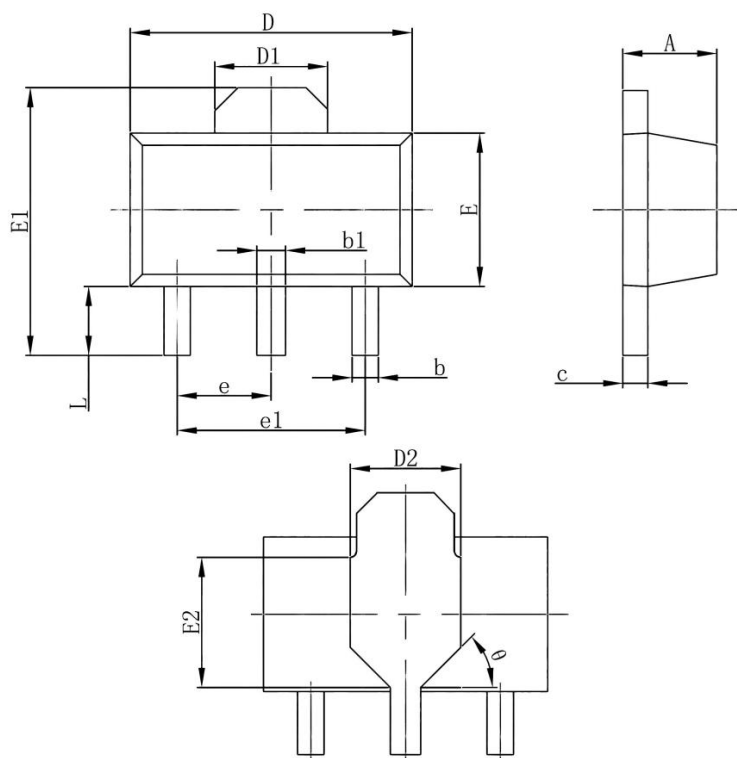


Maximum Transient Thermal Impedance



Safe Operation Area

SOT-89 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.300	4.700	0.169	0.185
D1	1.550 REF.		0.061 REF.	
D2	1.750 REF.		0.069 REF.	
E	2.250	2.650	0.089	0.104
E1	3.940	4.350	0.154	0.171
E2	1.900 REF.		0.075 REF.	
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.800	1.200	0.031	0.047
θ	45°		45°	