

SDM200P06S

-60V P-Channel MOSFETs

Rev B.0

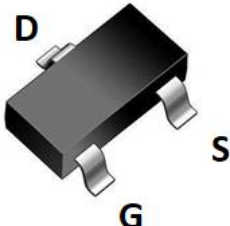
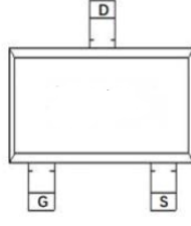
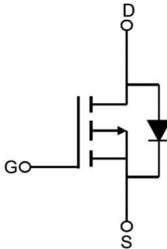
Feature

- ✧ Excellent $R_{DS(ON)}$
- ✧ Low Gate Charge
- ✧ High current Capability
- ✧ Green product (RoHS compliant), lead free
- ✧ 100% UIS Tested
- ✧ AEC-Q101 qualified

Product Summary

V_{DS}	-60	V
$V_{GS(th_Typ)}$	-1.5	V
$R_{DS(ON_Typ)}$ (at $V_{GS} = -10V$)	150	m Ω
I_D	-2	A

Type	Package	Marking	Outline	Media	Quantity (pcs)
SDM200P06S	SOT-23	N9ADE	Tape	7" Reel	3000

 <p>SOT-23 top view</p>	 <p>Pin Assignment</p>	 <p>Schematic Diagram</p>
--	---	--

Absolute Maximum Ratings (Rating at $T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Maximum	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	$T_A=25^\circ C$	-2
		$T_A=70^\circ C$	-1.6
Pulsed Drain Current ⁽¹⁾	I_{DM}	-8	A
Maximum Body-Diode Continuous Current	I_S	-1.4	A
Power Dissipation	P_D	$T_A=25^\circ C$	1
		$T_A=70^\circ C$	0.8
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ C$

Electrical Characteristics (Rating at $T_J=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
STATIC PARAMETERS						
BV_{DSS}	Drain-Source Breakdown Voltage	$I_D=-250\mu\text{A}$, $V_{GS}=0\text{V}$	-60	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-60$ $V_{GS}=0\text{V}$ $T_A=25^{\circ}\text{C}$	-	-	-1	μA
		$V_{DS}=-60$ $V_{GS}=0\text{V}$ $T_A=125^{\circ}\text{C}$	-	-	-100	
I_{GSS}	Gate-Body Leakage Current	$V_{DS}=0\text{V}$, $V_{GS}=\pm 20\text{V}$	-	-	± 100	nA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}$, $I_D=-250\mu\text{A}$	-1	-1.5	-2.5	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10\text{V}$, $I_D=-2\text{A}^{(2)}$	-	150	200	m Ω
		$V_{GS}=-4.5\text{V}$, $I_D=-1\text{A}^{(2)}$	-	200	300	
V_{SD}	Diode Forward Voltage	$I_S=-2\text{A}$, $V_{GS}=0\text{V}$	-	-0.84	-1.2	V
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	$V_{GS}=0\text{V}$, $V_{DS}=-30\text{V}$, $f=1\text{MHz}$	-	311	-	pF
C_{oss}	Output Capacitance		-	23	-	pF
C_{rss}	Reverse Transfer Capacitance		-	17	-	pF
SWITCHING PARAMETERS						
Q_g	Total Gate Charge	$V_{GS}=-10\text{V}$, $V_{DD}=-30\text{V}$, $I_D=-2\text{A}$	-	5.5	-	nC
Q_{gs}	Gate Source Charge		-	1.3	-	nC
Q_{gd}	Gate Drain Charge		-	1.7	-	nC
$t_{D(on)}$	Turn-On Delay Time	$V_{GS}=-10\text{V}$, $V_{DS}=-30\text{V}$, $R_G=3.3\Omega$,	-	43	-	ns
t_r	Turn-On Rise Time		-	23	-	ns
$t_{D(off)}$	Turn-Off Delay Time		-	27	-	ns
t_f	Turn-Off Fall Time		-	33	-	ns

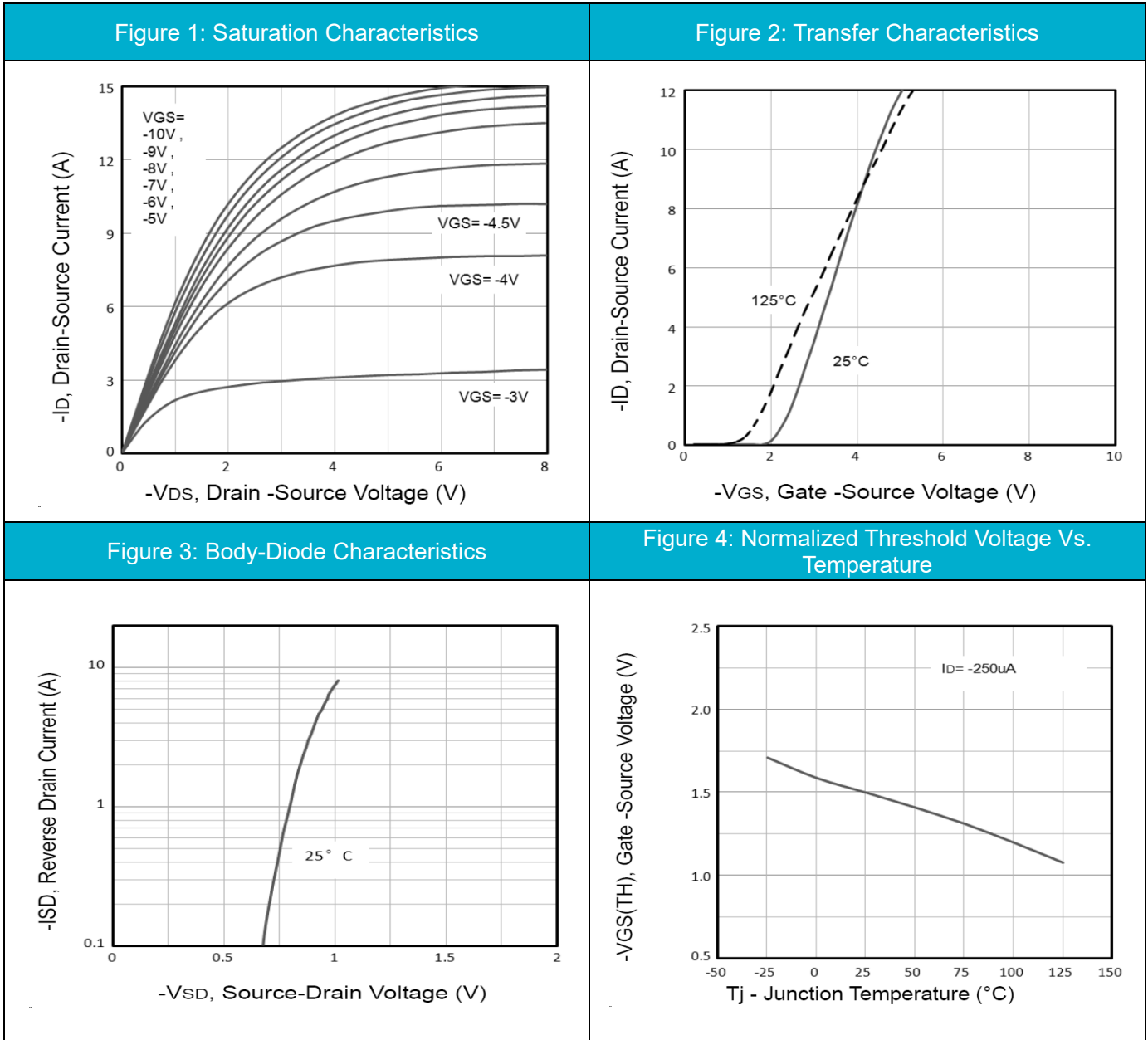
Thermal Resistances

Symbol	Parameter	Typ	Max	Unit
R _{θJA}	Thermal resistance from junction to ambient	-	125	°C /W

Notes:

- 1.Pulse width limited by maximum allowable junction temperature.
- 2.Pulse test ; Pulse width<300us, duty cycle<2%.

Typical Electrical and Thermal Characteristics



Typical Electrical and Thermal Characteristics

Figure 5: Gate-Charge characteristics

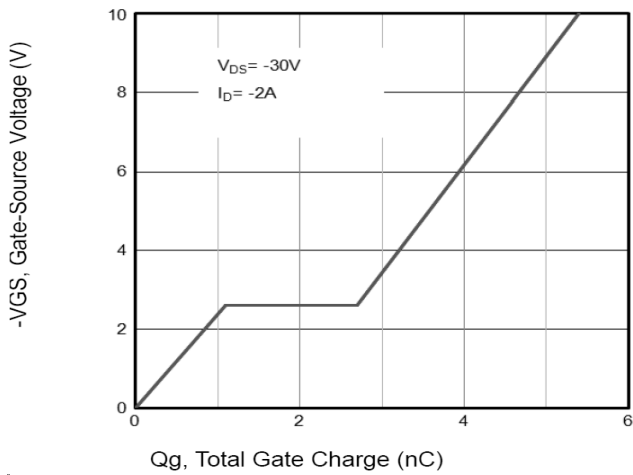


Figure 6: Capacitance characteristics

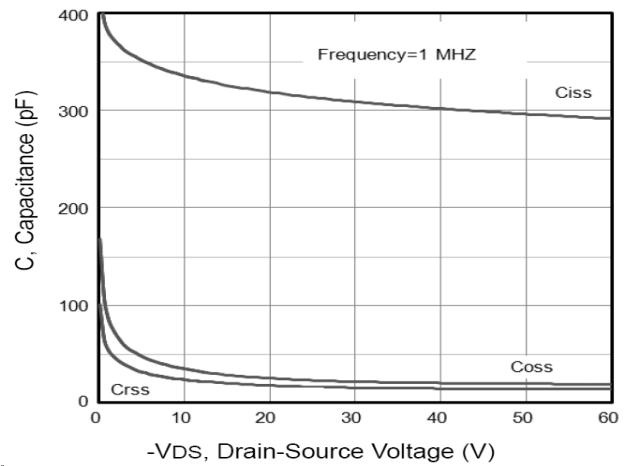


Figure 7: Drain -Source Voltage vs Gate -Source Voltage

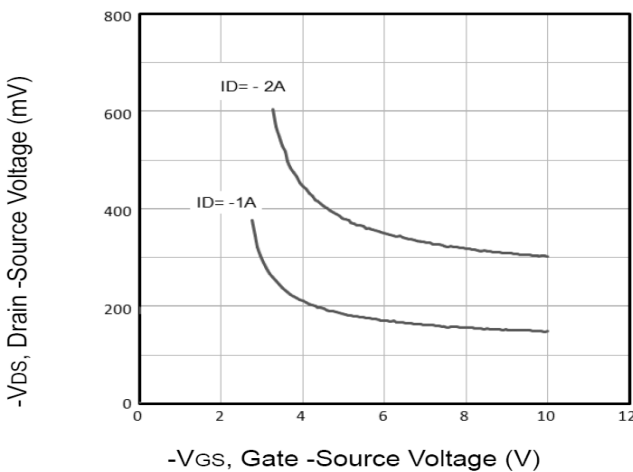


Figure 8: Maximum Safe Operating Area

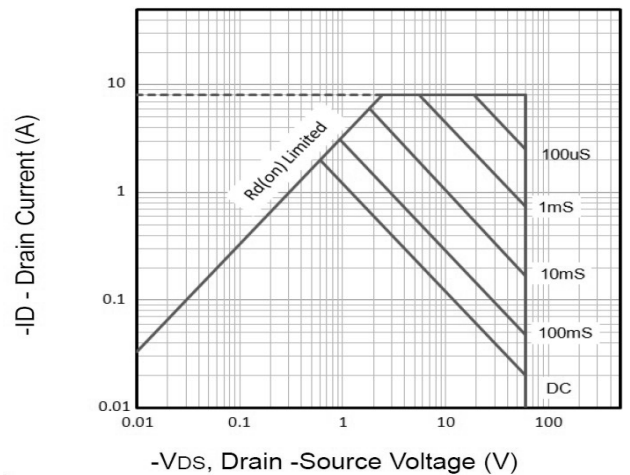
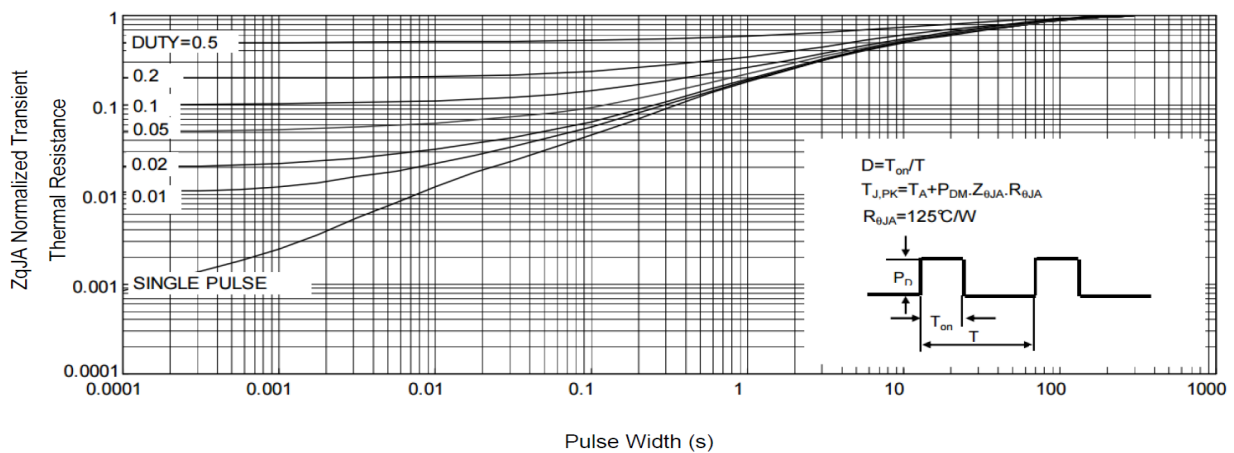


Figure 9: Normalized Maximum Transient Thermal Impedance



Test Circuit

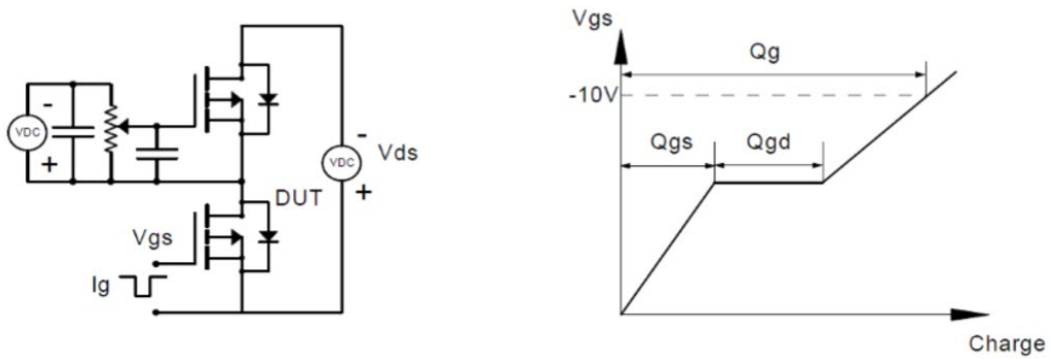


Figure1: Gate Charge Test Circuit & Waveforms

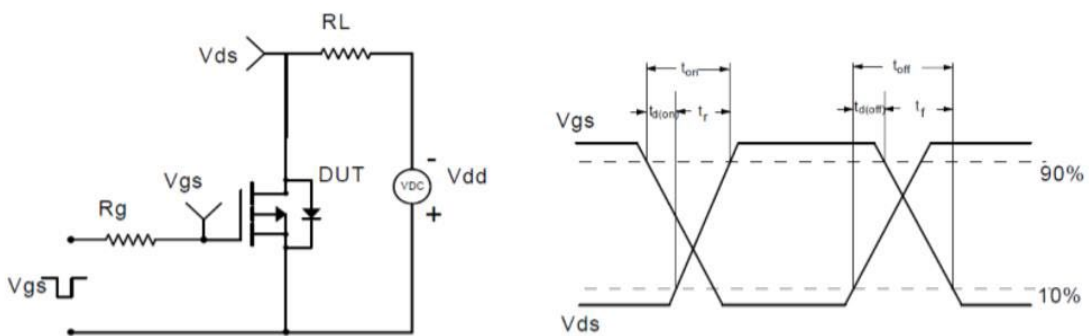


Figure2: Resistive Switching Test Circuit & Waveforms

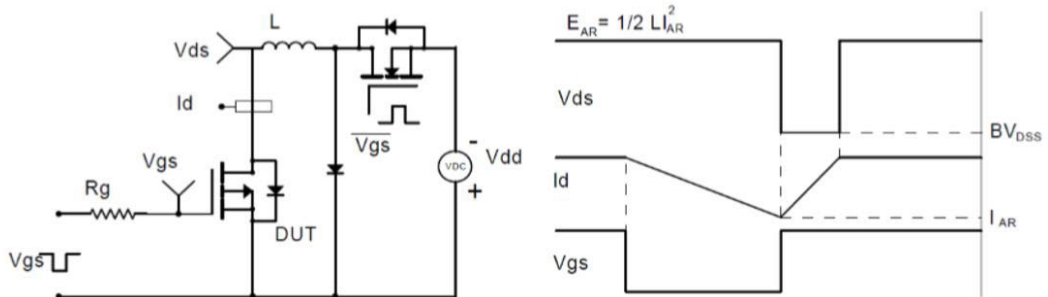


Figure3: Unclamped Inductive Switching (UIS) Test Circuit & Waveforms

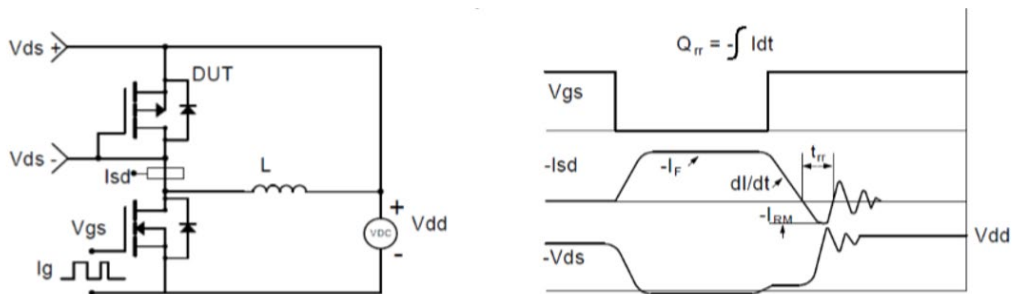
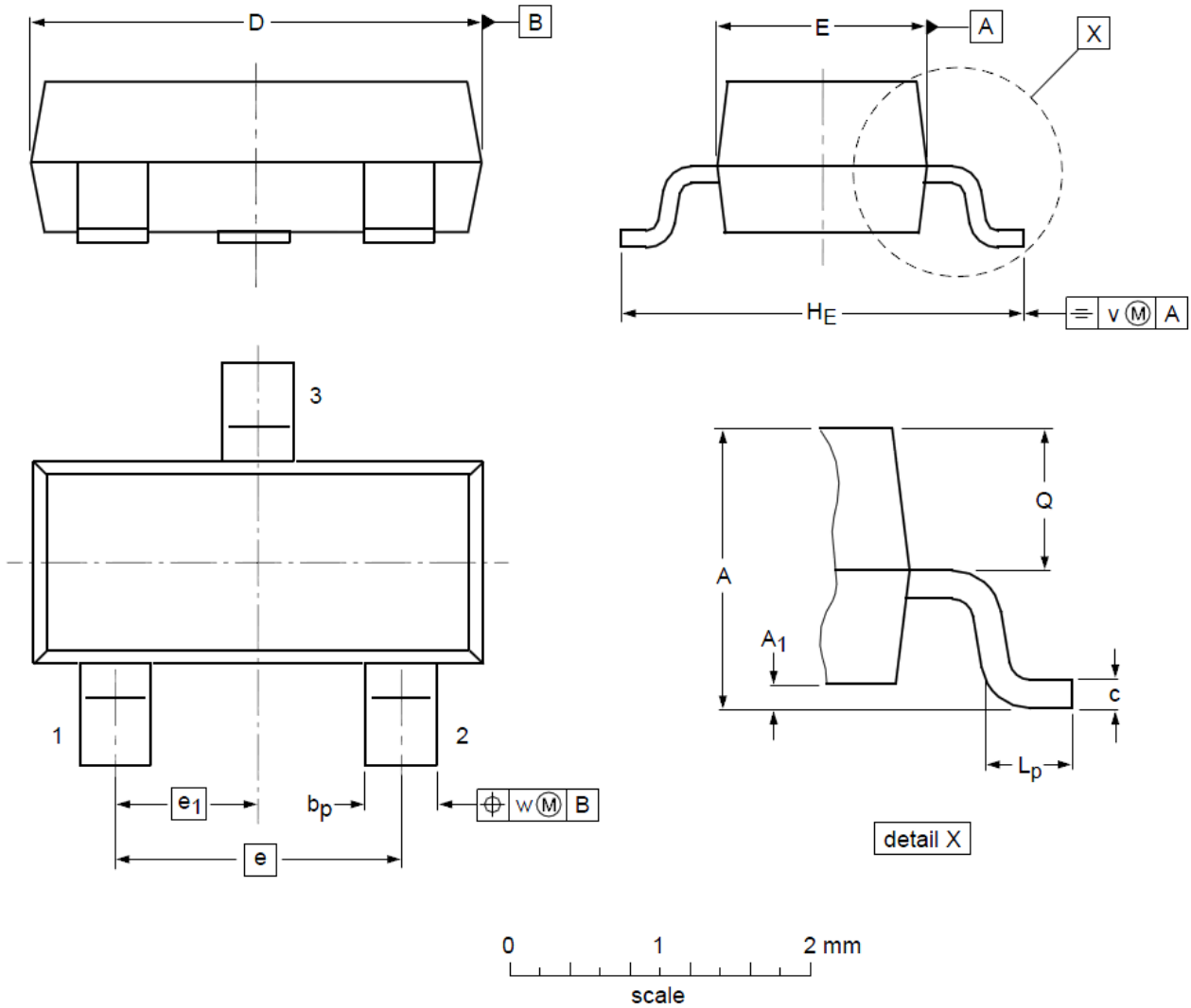


Figure4: Diode Recovery Test Circuit & Waveforms

SOT-23 Package Information



DIMENSIONS (unit : mm)

Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	0.90	1.01	1.15	A ₁	0.01	0.05	0.10
b _p	0.30	0.42	0.50	c	0.08	0.13	0.15
D	2.80	2.92	3.00	E	1.20	1.33	1.40
e	--	1.90	--	e ₁	--	0.95	--
H _E	2.25	2.40	2.55	L _p	0.30	0.42	0.50
Q	0.45	0.49	0.55	v	--	0.20	--
w	--	0.10	--				

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [SINEDEVICE](#) manufacturer:

Other Similar products are found below :

[IRFD120](#) [IRFY240C](#) [JANTX2N5237](#) [2SK2267\(Q\)](#) [BUK455-60A/B](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#)
[IPS70R2K0CEAKMA1](#) [SQD23N06-31L-GE3](#) [TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#) [DMN1017UCP3-7](#) [EFC2J004NUZTDG](#)
[DMN1053UCP4-7](#) [SQJ469EP-T1-GE3](#) [NTE2384](#) [DMC2700UDMQ-7](#) [DMN2080UCB4-7](#) [DMN61D9UWQ-13](#) [US6M2GTR](#)
[DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#) [STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#)
[DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [DMN2990UFB-7B](#) [IPB80P04P405ATMA2](#) [2N7002W-G](#) [MCAC30N06Y-](#)
[TP](#) [MCQ7328-TP](#) [NTMC083NP10M5L](#) [NVMFS2D3P04M8LT1G](#) [BXP7N65D](#) [BXP4N65F](#) [AOL1454G](#) [WMJ80N60C4](#) [BXP2N20L](#)
[BXP2N65D](#) [BXT1150N10J](#) [BXT1700P06M](#) [TSM60NB380CP](#) [ROG](#) [RQ7L055BGTCR](#) [DMNH15H110SK3-13](#)