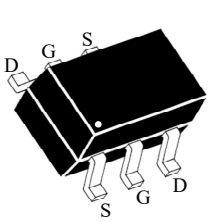
SMX8472KDWH

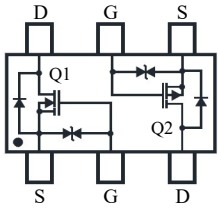
Comlementary Pair Enhancement Mode Field Effect Transistors

FEATURES

· ESD protected gate

· Suffix "H" indicates Halogen-free parts, ex.SMX8472KDWH

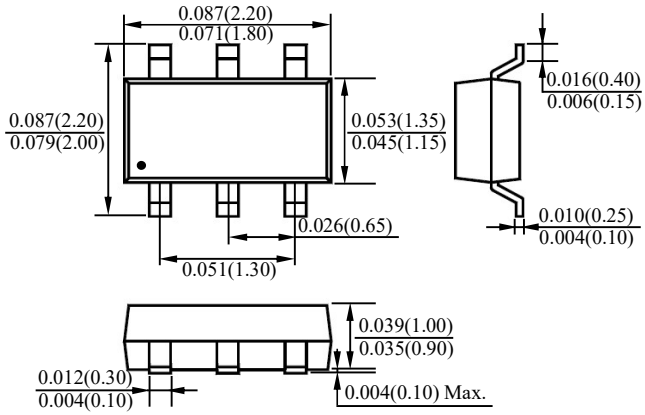




Top View

D	Drain
G	Gate
S	Source

SOT-363



Dimensions in inch and (millimeter)

Maximum Ratings(T_A=25 ℃ unless otherwise noted)

Parameter		Symbol	Q1 Value	Q2 Value	Unit
Drain-Source Voltage		V_{DS}	60	-50	V
Gate-Source Voltage		V_{GS}	±20	±20	V
Continuous Drain Current		I_D	0.30	-0.16	A
Peak Drain Current	(Note 1)	I_{DM}	1.20	-0.64	A
Power Dissipation	(Note 2)	P_D	250		mW
Thermal Resistance from Junction to Ambient	(Note 2)	$R_{\theta JA}$	500		℃/W
Operating and Storage Temperature Range		T_J ,T_{stg}	- 55 to + 150		℃

Note :

1. Pulse width ≤10μs

2. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

Electrical Characteristics(T_A=25 ℃ unless otherwise specified)

N-Channel Q1

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Static						
Drain Source Breakdown Voltage	I_D=10μA	$V_{(BR)DSS}$	60	-	-	V
Gate Threshold Voltage	V_{DS}=10V, I_D=250μA	$V_{GS(th)}$	1.10	-	1.75	V
Zero Gate Voltage Drain Current	V_{DS}=60V	I_{DSS}	-	-	1	μA
Gate-Body Leakage Current	V_{GS}=±20V	I_{GSS}	-	-	±10	μA
Drain-Source On-State Resistance	V_{GS}=10V, I_D=0.5A V_{GS}=5V, I_D=0.05A	$R_{DS(on)}$	- -	- -	3 4	Ω
Dynamic						
Forward Transfer Admittance	V_{DS}=10V, I_D=0.2A	g_{FS}	80	-	-	mS
Gate Resistance	V_{GS}=0V, V_{DS}=0V, f=1MHz	R_g	-	200	-	Ω
Total Gate Charge	V_{DS}=10V, V_{GS}=4.5V, I_D=0.5A	Q_g	-	0.44	-	nC
Gate-Source Charge		Q_{gs}	-	0.20	-	
Gate-Drain Charge		Q_{gd}	-	0.10	-	
Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	C_{iss}	-	22.5	50.0	pF
Output Capacitance		C_{oss}	-	12.0	25.0	
Reverse Transfer Capacitance		C_{rss}	-	0.5	10.0	
Turn-On Delay Time	V_{DS}=30V, V_{GS}=10V, I_D=0.5A, R_g=25Ω	$t_{d(on)}$	-	2.7	-	ns
Turn-On Rise Time		t_r	-	2.5	-	
Turn-Off Delay Time		$t_{d(off)}$	-	13.0	-	
Turn-Off Fall Time		t_f	-	8.0	-	
Drain-Source Body Diode						
Drain-Source Diode Forward Voltage	V_{GS}=0V, I_S=0.5A	V_{SD}	-	0.85	-	V
Diode Continuous Forward Current	-	I_S	-	-	0.3	A
Reverse Recovery Time	I_S=0.5A, di/dt=100A/μs	t_{rr}	-	30	-	ns
Reverse Recovery Charge		Q_{rr}	-	29	-	nC

Electrical Characteristics(T_A=25 ℃ unless otherwise specified)

P-Channel Q2

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Static						
Drain Source Breakdown Voltage	I_D=-10μA	$V_{(BR)DSS}$	-50	-	-	V
Zero Gate Voltage Drain Current	V_{DS}=-50V	I_{DSS}	-	-	-1	μA
Gate Source Leakage Current	V_{GS}=±20V	I_{GSS}	-	-	±10	μA
Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250μA	$V_{GS(th)}$	-1.1	-	-2.1	V
Static Drain Source On-Resistance	V_{GS}=-10V, I_D=-0.1A V_{GS}=-5V, I_D=-0.1A	$R_{DS(on)}$	- -	- -	7.5 8.5	Ω
Dynamic						
Forward Transconductance	V_{DS}=-10V, I_D=-0.1A	g_{fs}	-	150	-	mS
Total Gate Charge	V_{DS}=-25V, V_{GS}=-4.5A, I_D=-0.1V	Q_g	-	1.1	-	nC
Gate-Source Charge		Q_{gs}	-	0.3	-	
Gate-Drain Charge		Q_{gd}	-	0.2	-	
Input Capacitance	V_{DS}=-30V, V_{GS}=0V, f=1MHz	C_{iss}	-	38	-	pF
Output Capacitance		C_{oss}	-	9	-	
Reverse Transfer Capacitance		C_{rss}	-	6	-	
Turn-On Delay Time	V_{DD}=-25V, V_{GS}=-10V, I_D=-0.1A, R_g=6.8Ω	$t_{d(on)}$	-	14	-	ns
Turn-On Rise Time		t_r	-	4	-	
Turn-Off Delay Time		$t_{d(off)}$	-	15	-	
Turn-Off Fall Time		t_f	-	77	-	
Drain-Source Body Diode						
Drain-Source Diode Forward Voltage	V_{GS}=0V, I_S=-0.115A	V_{SD}	-0.48	-	-1.20	V
Continuous Source Current	-	I_S	-	-	-0.16	A
Reverse Recovery Time	I_S=-0.1A, di/dt=100A/μs	t_{rr}	-	60	-	ns
Reverse Recovery Charge		Q_{rr}	-	58	-	nC

RATINGS AND CHARACTERISTIC CURVES

N-Channel Q1

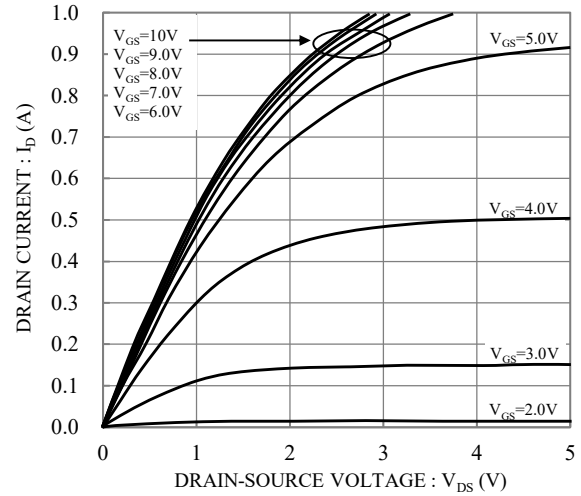


Fig.1 Typical Output Characteristics

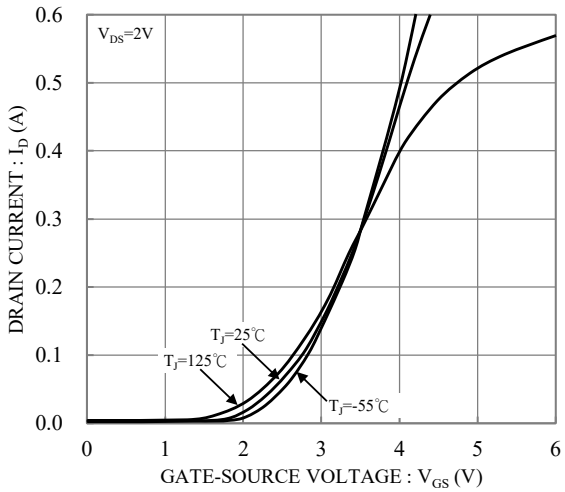


Fig.2 Typical Transfer Characteristics

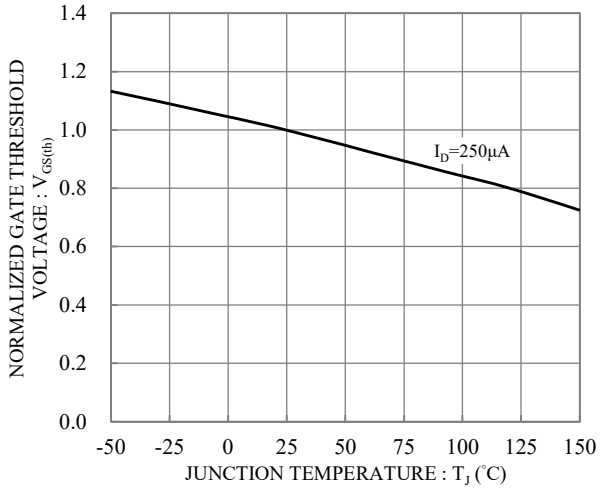


Fig.3 Gate Threshold Voltage vs. Junction Temperature

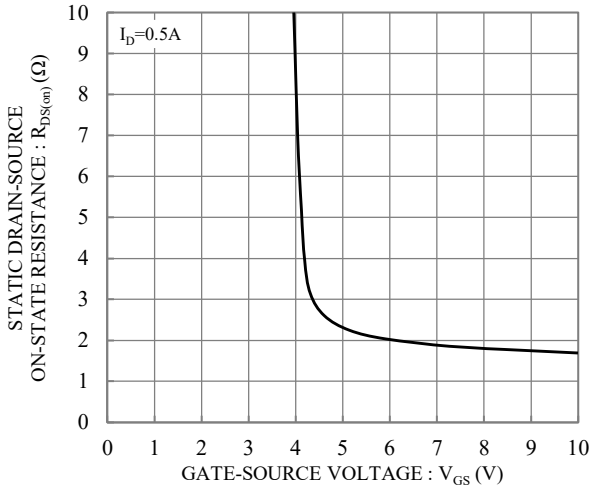


Fig.4 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

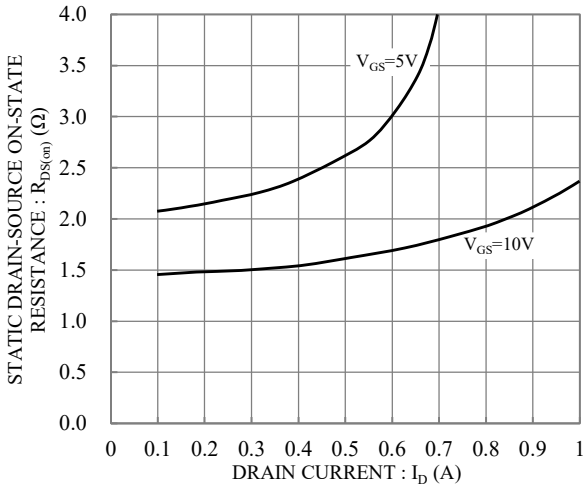


Fig.5 Static Drain-Source On-State Resistance vs. Drain Current

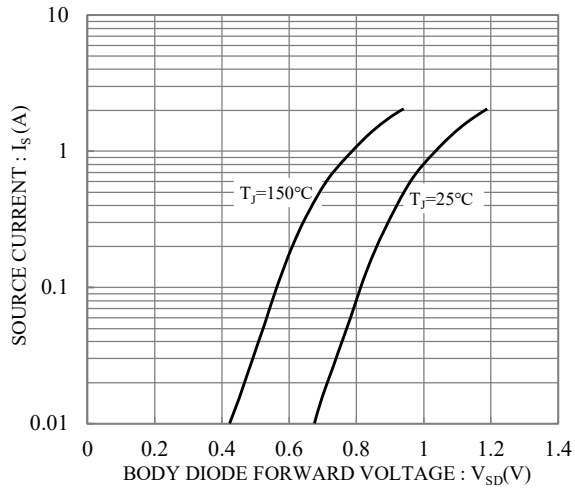


Fig.6 Body Diode Forward Voltage vs. Source Current

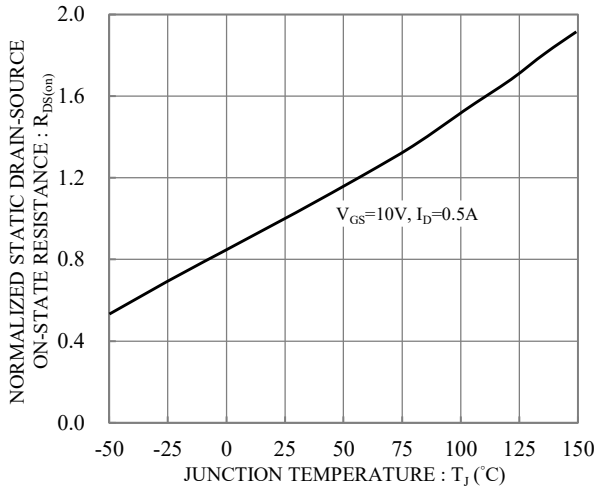


Fig.7 Drain-Source On-State Resistance vs. Junction Tempearture

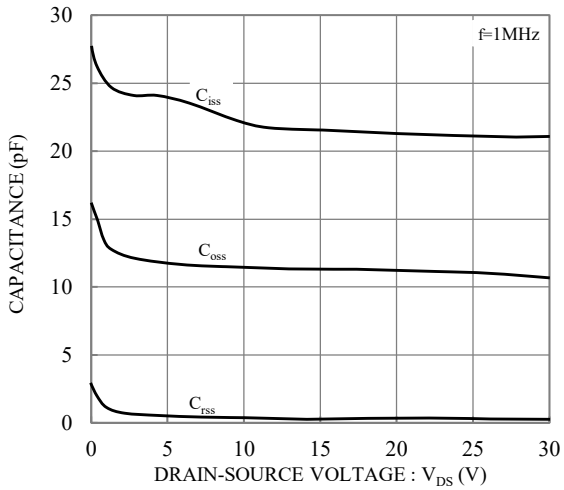


Fig.8 Capacitance vs. Drain-Source Voltage

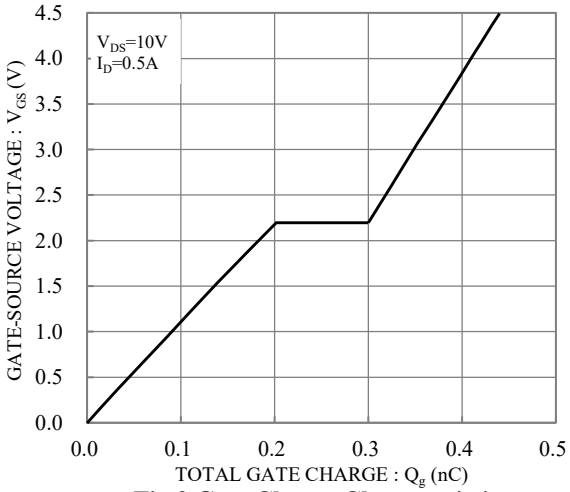


Fig.9 Gate Charge Characteristics

P-Channel Q2

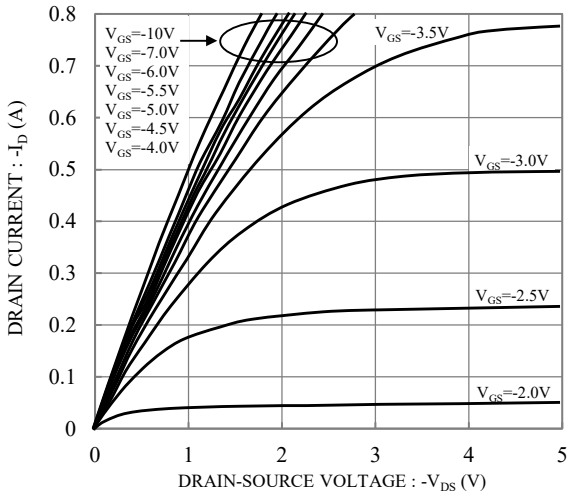


Fig.10 Typical Output Characteristics

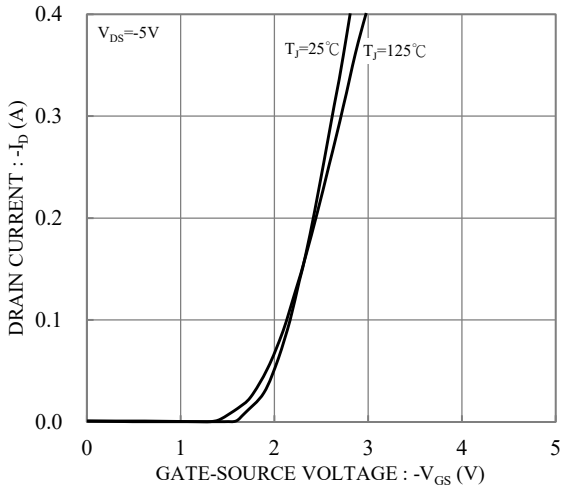


Fig.11 Typical Transfer Characteristics

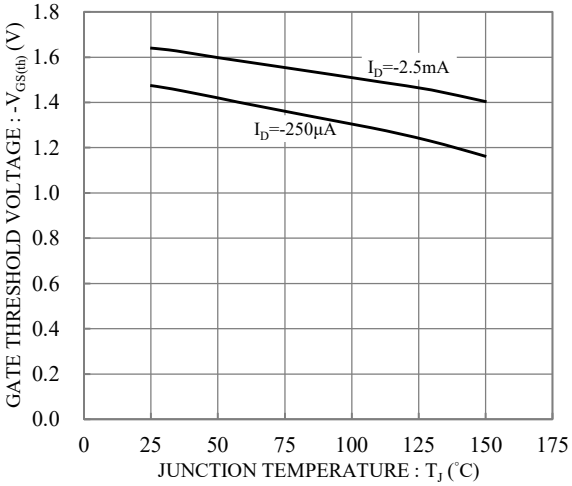


Fig.12 Gate Threshold Voltage vs. Junction Temperature

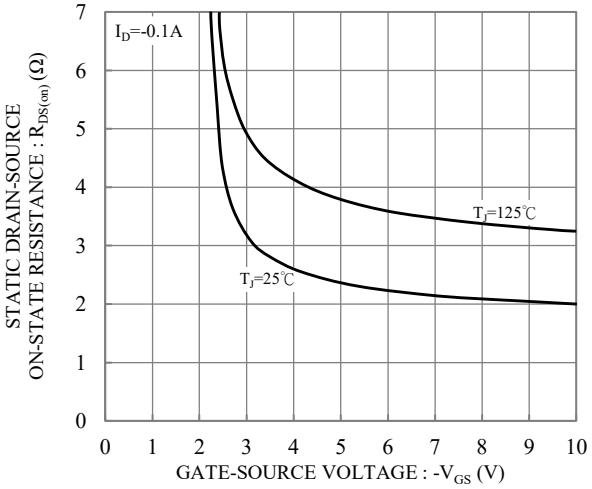


Fig.13 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

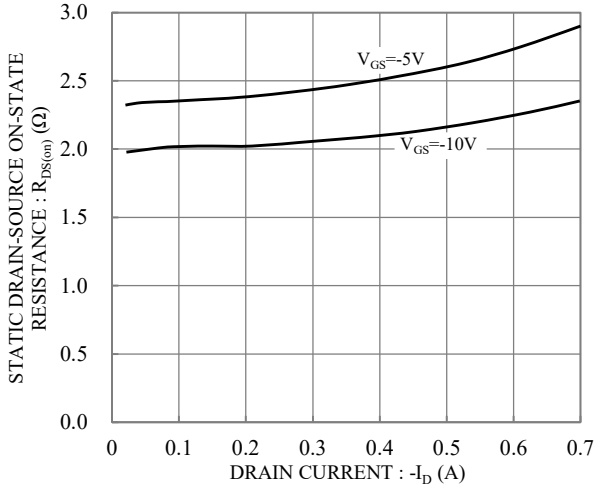


Fig.14 Static Drain-Source On-State Resistance vs. Drain Current

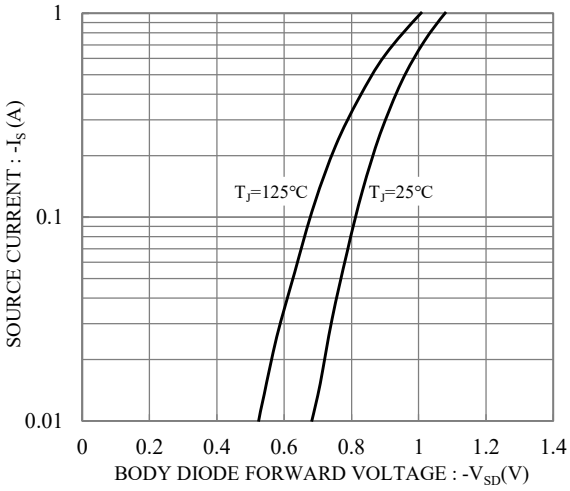


Fig.15 Body Diode Forward Voltage vs. Source Current

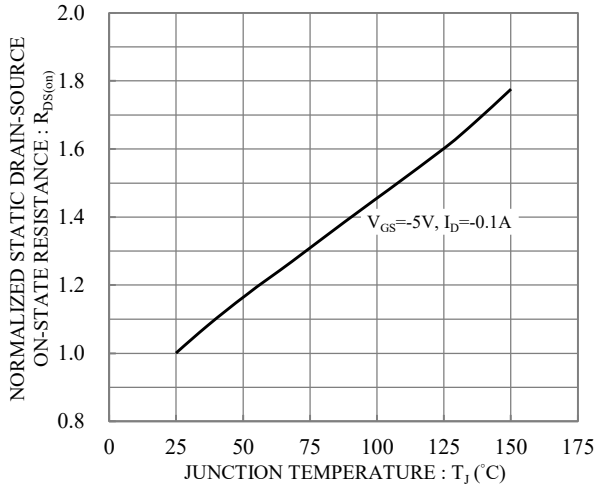


Fig.16 Drain-Source On-State Resistance vs. Junction Tempearture

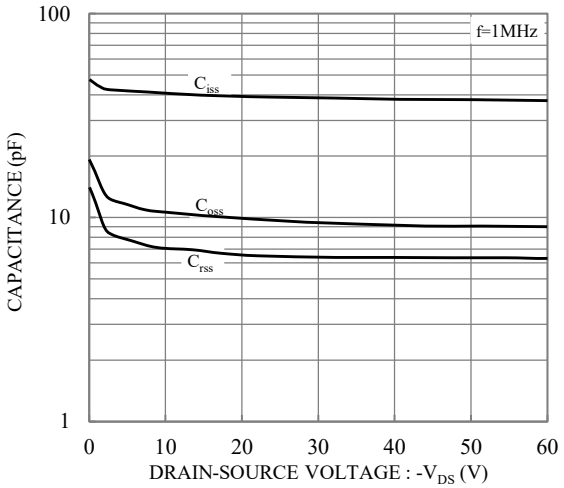


Fig.17 Capacitance vs. Drain-Source Voltage

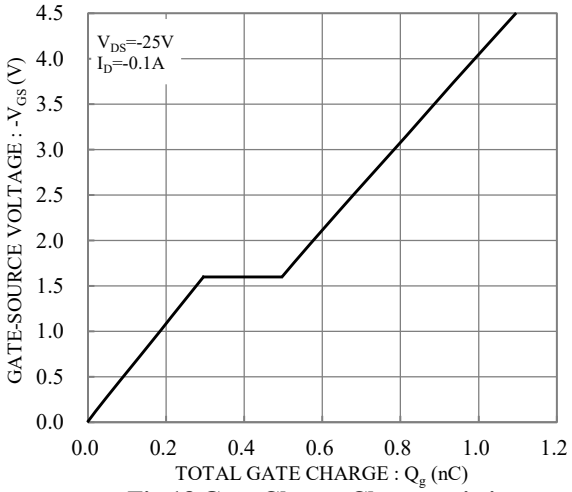


Fig.18 Gate Charge Characteristics

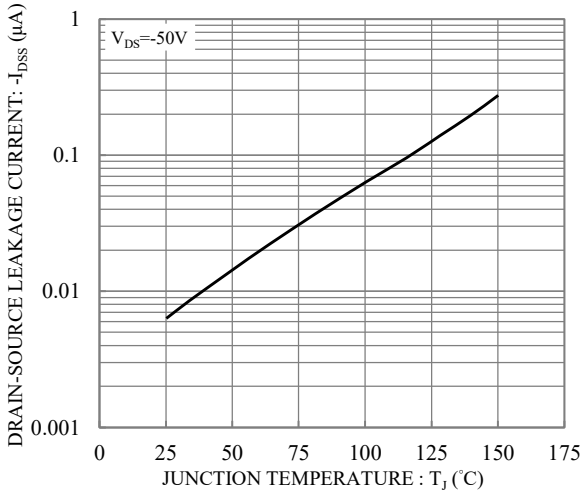


Fig.19 Drain-Source Leakage Current vs. Junction Temperature

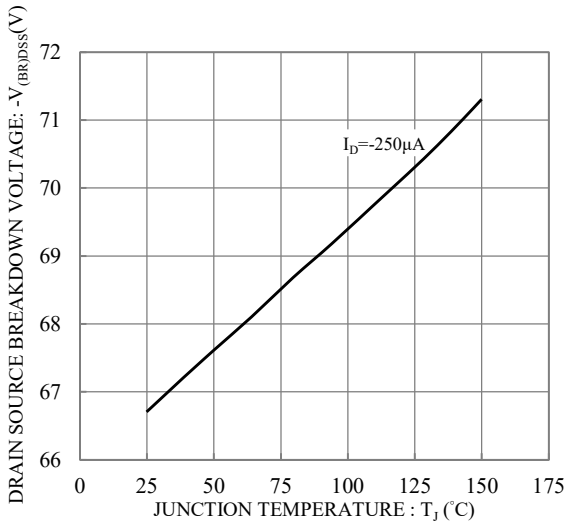
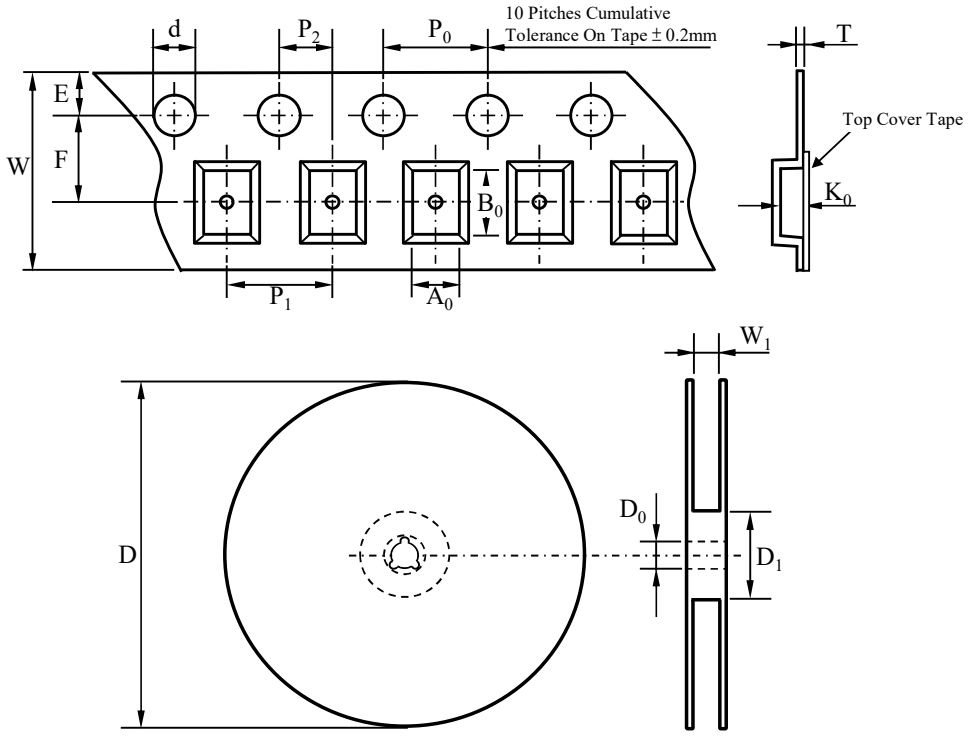


Fig.20 Drain Source Breakdown Voltage vs. Junction Temperature

TAPE & REEL SPECIFICATION



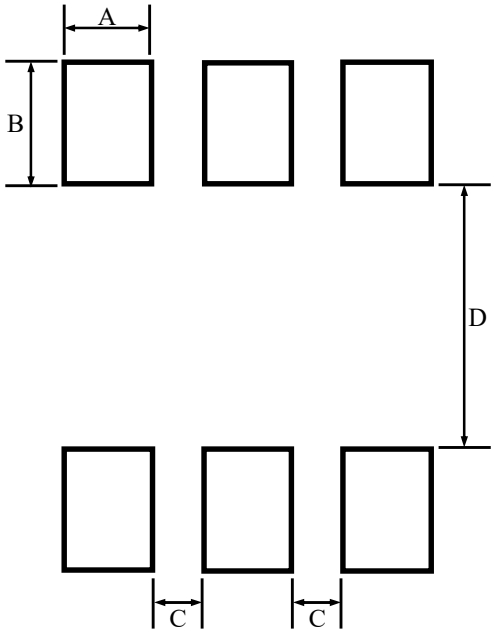
Item	Symbol	SOT-363
Carrier width	A_0	*
Carrier length	B_0	
Carrier depth	K_0	
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178.00 ± 2.00
Feed hole width	D_0	13.00 ± 0.50
Reel inner diameter	D_1	MIN. 54.00
Sprocke hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.10
Sprocke hole pitch	P_0	4.00 ± 0.10
Punch hole pitch	P_1	4.00 ± 0.10
Embossment center	P_2	2.00 ± 0.10
Overall tape thickness	T	MAX. 0.60
Tape width	W	MAX. 8.30
Reel width	W1	8.40 ± 1.50

Note *: A_0, B_0, and K_0 are determined by component size. The clearance between the components and the cavity must be within 0.05 mm min. to 0.5 mm max.

ORDER INFORMATION

Part Number	Marking Code	Reel Size	Quantity
SMX8472KDWH	K8	7"	3,000

SUGGESTED SOLDER PAD LAYOUT



Unit :mm

PACKAGE	A	B	C	D
SOT-363	0.42	0.60	0.23	1.30