RTE13K6M-T150

Composite Transistor
Silicon N-channel MOSFET
Zener Diode

AEC-Q101 Compliance

DESCRIPTION

RTE13K6M is a composite transistor built INK0012AX chip and Zener Diode (Vz=8.2V) chip in SC-88 package
Use of this product enables miniaturization of equipment and reduction parts and process.

FEATURE

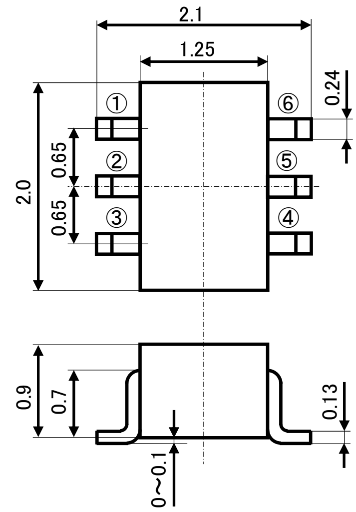
- This product is packaged in super mini PKG(6pin) and mount INK0012AX chip and Zener diode chip(Vz=8.2V).
- Enables miniaturization of equipment and high density mounting.

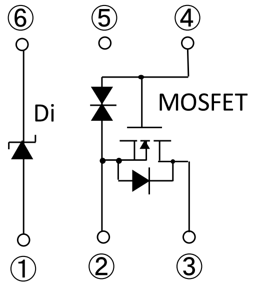
APPLICATION

Power supply circuit
Driver circuit

OUTLINE DRAWING

Unit:mm





TERMINAL CONNECTOR
①:ANODE
②:SOURCE
③:DRAIN
④:GATE
⑤:-
⑥:CATHODE

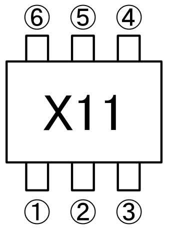
JEITA:SC-88
JEDEC:－

MAXIMUM RATING (Ta=25℃)

SYMBOL	PARAMETER	RATING		UNIT
V_{DSS}	Drain-source voltage	MOSFET	30	V
V_{GSS}	Gate-source voltage		±20	V
I_D	Drain current(DC)		200	mA
I_{DP}	Drain current(Pulse)		400	mA
P_D	Total power dissipation	MOSFET Di Common	150	mW
T_{ch}	Channel temperature		＋150	℃
T_{stg}	Range of Storage temperature		-55～＋150	℃

※1:Pw≦10μs, Duty cycle≦1%

MARKING



ELECTRICAL CHARACTERISTICS (Ta=25℃)

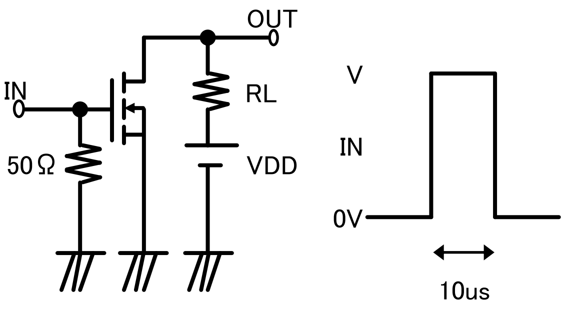
【MOSFET】

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
$V_{(BR)DSS}$	Drain-source breakdown voltage	I_D=100μA, V_{GS}=0V	30	–	–	V
I_{GSS}	Gate-source leak current	V_{GS}=±15V, V_{DS}=0V	–	–	±1.0	μA
I_{DSS}	Zero gate voltage drain current	V_{DS}=30V, V_{GS}=0V	–	–	1.0	μA
V_{th}	Gate threshold voltage	I_D=250μA, V_{DS}=V_{GS}	1.0	–	2.0	V
$\lvert Y_{fs} \rvert$	Forward transfer admittance	V_{DS}=10V, I_D=100mA	–	245	–	mS
$R_{DS(ON)}$	Static drain-source on-state resistance	I_D=100mA, V_{GS}=4.0V	–	1.7	–	Ω
		I_D=100mA, V_{GS}=10.0V	–	1.0	–	
C_{iss}	Input capacitance	V_{DS}=10V, V_{GS}=0V, f=1MHz	–	23	–	pF
C_{oss}	Output capacitance		–	7.0	–	
t_{on}	Switching time	V_{DD}=5V, I_D=10mA V_{GS}=0～5V	–	30	–	ns
t_{off}			–	66	–	

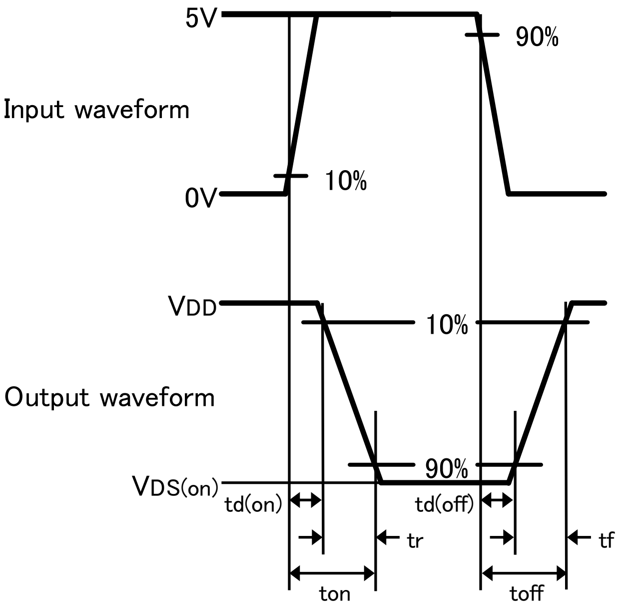
【Di】

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
V_{BR}	Breakdown voltage	I_R=5mA	7.8	8.2	8.6	V
I_R	Reverse current	V_R=6.5V	–	–	1.0	μA
Ct	Terminal capacitance	VR=0V	–	57	–	pF

Switching time test condition

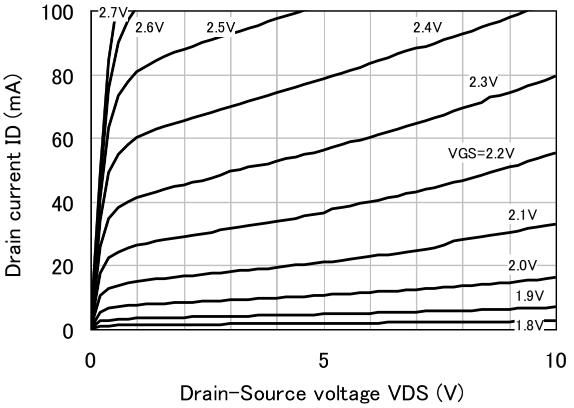


Duty ≦ 1%
Input : tr, tf < 10ns
VDD = 5V
Common source
Ta = 25℃

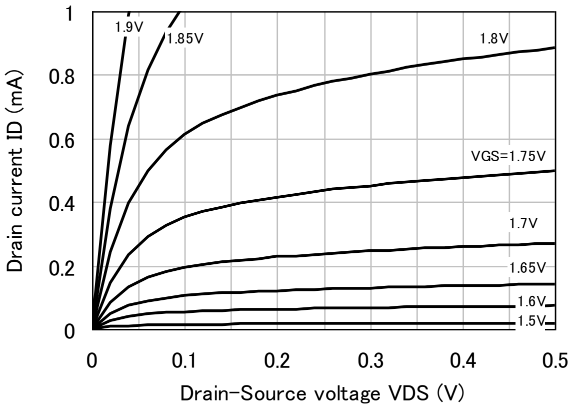


TYPICAL CHARACTERISTICS (MOSFET)

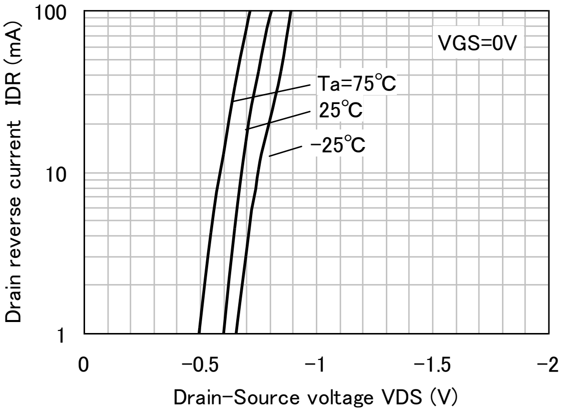
Ta=25℃ ID - VDS



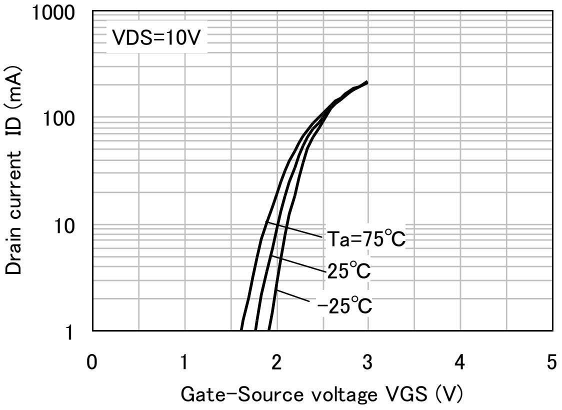
Ta=25℃ ID - VDS(Low voltage region)



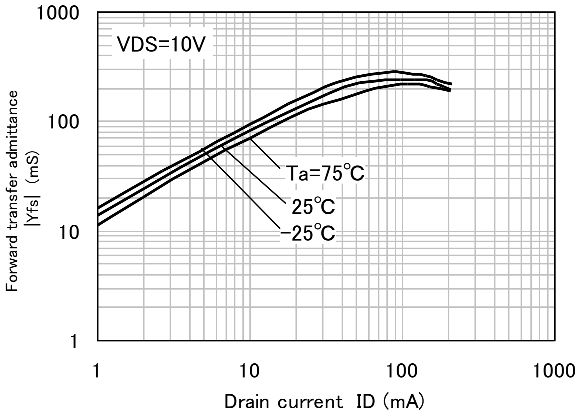
IDR - VDS



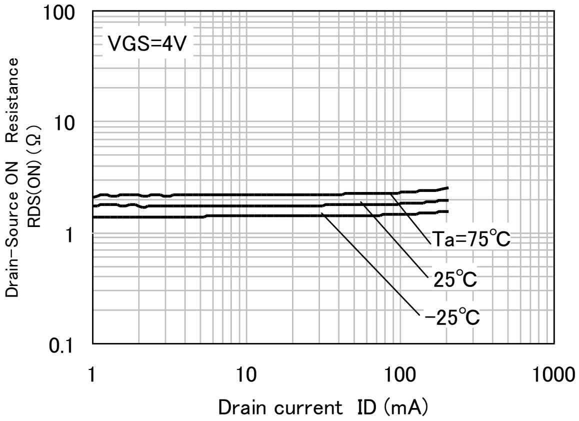
ID - VGS

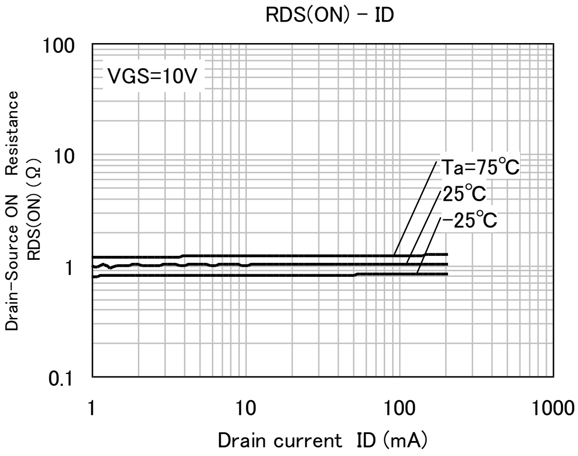


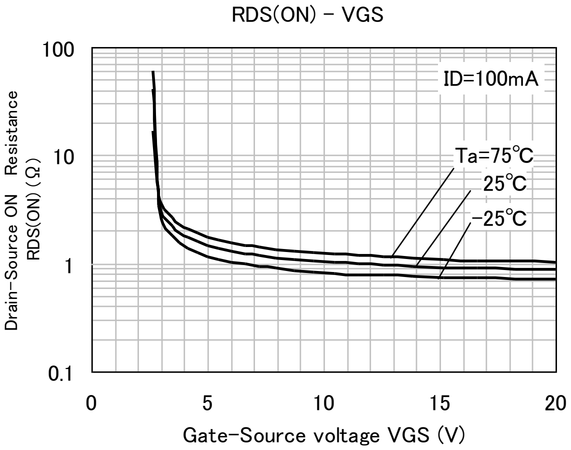
|Yfs| - ID

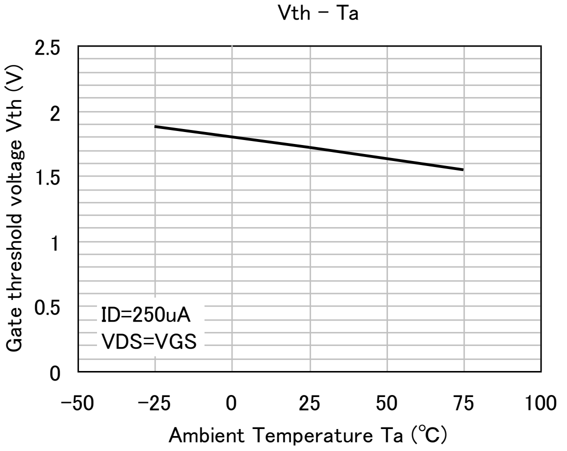


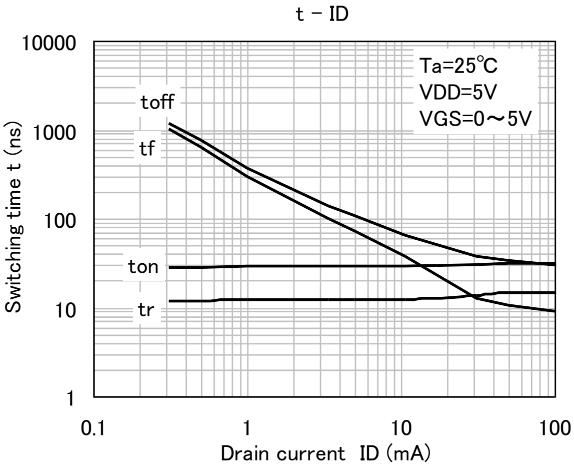
RDS(ON) - ID

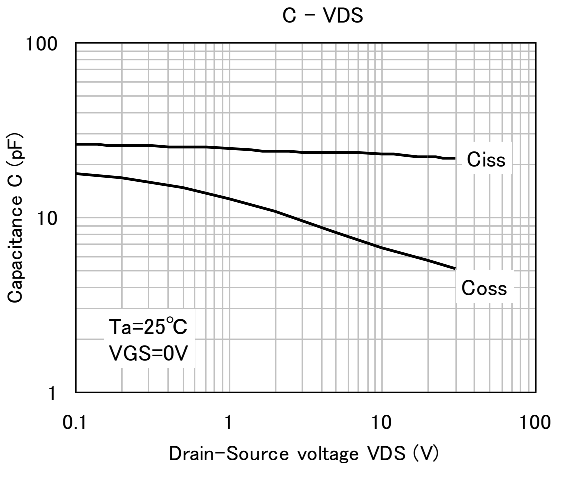



RDS(ON) - ID
100
10
1
0.1
VGS=10V
Ta=75℃
25℃
−25℃
Drain-Source ON Resistance
RDS(ON) (Ω)
1
10
100
1000
Drain current ID (mA)

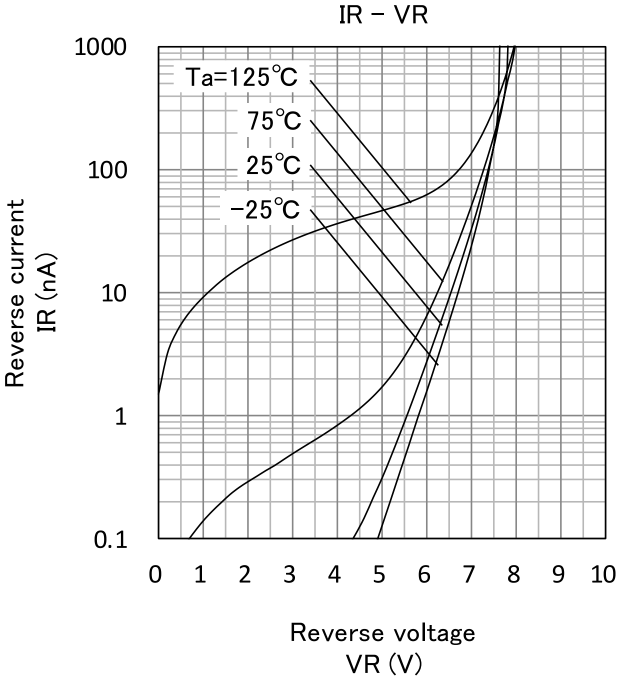

RDS(ON) - VGS
100
10
1
0.1
ID=100mA
Ta=75℃
25℃
−25℃
Drain-Source ON Resistance
RDS(ON) (Ω)
0
5
10
15
20
Gate-Source voltage VGS (V)

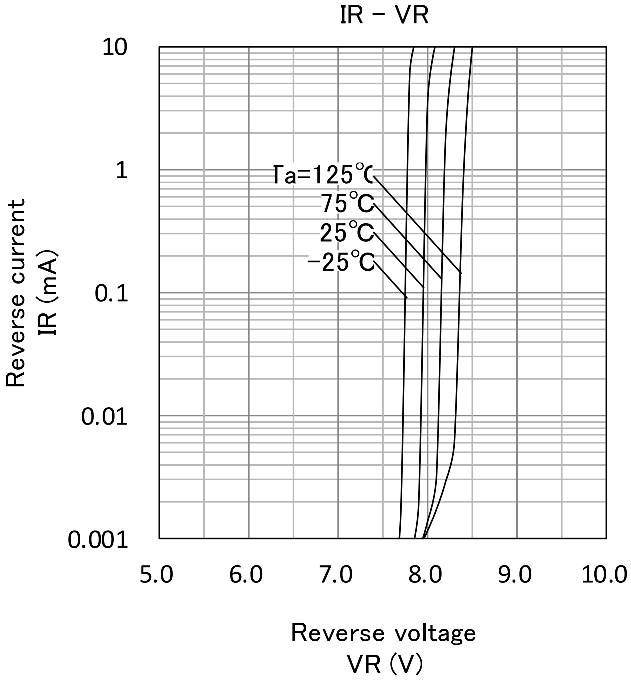

Vth - Ta
2.5
2
1.5
1
0.5
0
ID=250uA
VDS=VGS
Gate threshold voltage Vth (V)
−50
−25
0
25
50
75
100
Ambient Temperature Ta (℃)

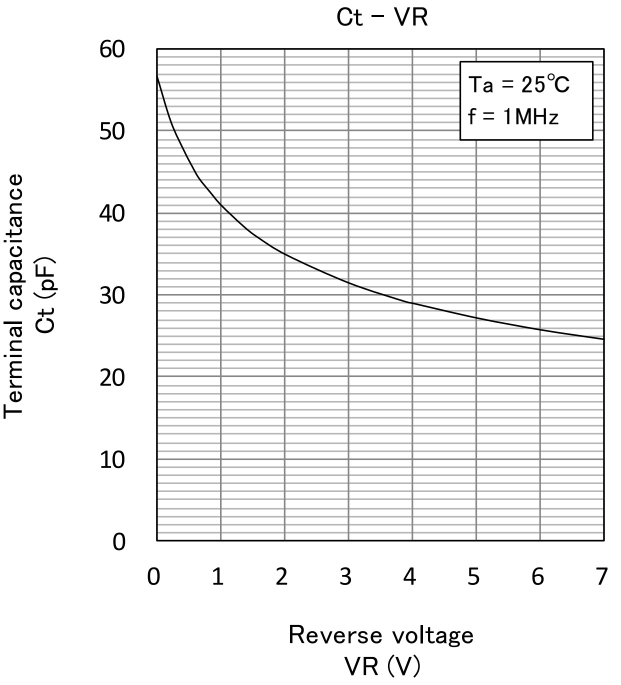

t - ID
10000
1000
100
10
1
Ta=25℃
VDD=5V
VGS=0～5V
toff
tf
ton
tr
Switching time t (ns)
0.1
1
10
100
Drain current ID (mA)

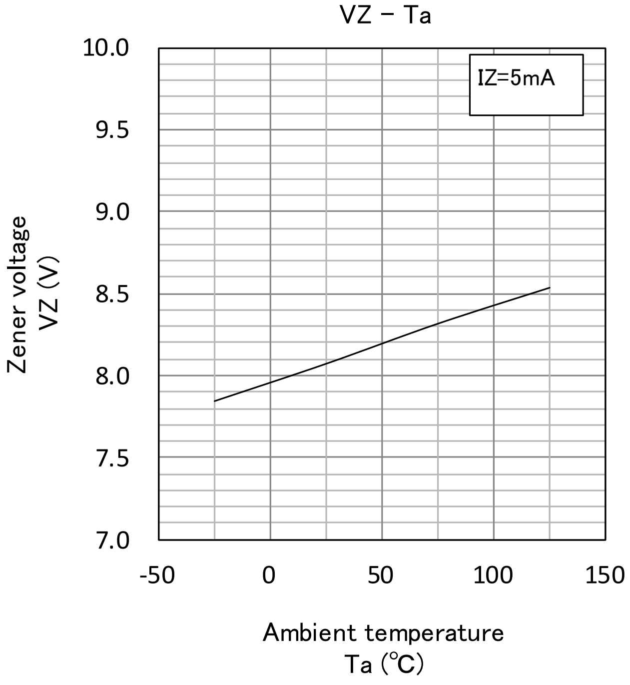

C - VDS
100
10
1
Ciss
Coss
Ta=25℃
VGS=0V
Capacitance C (pF)
0.1
1
10
100
Drain-Source voltage VDS (V)

TYPICAL CHARACTERISTICS (Di)









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