Features

High density cell design for Low $R_{DS(on)}$
Voltage controlled small signal switch
Rugged and reliable
High saturation current capability
ESD protected

72K

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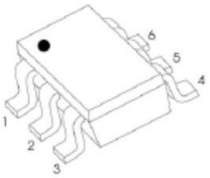
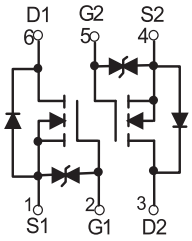


Equivalent Circuit



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source voltage	60	V
V_{GS}	Gate-Source voltage	±20	V
I_D	Drain Current	300	mA
P_D	Power Dissipation	0.15	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃
$R_{\theta JA}$	Thermal Resistance fromJunction to Ambient	833	℃ /W

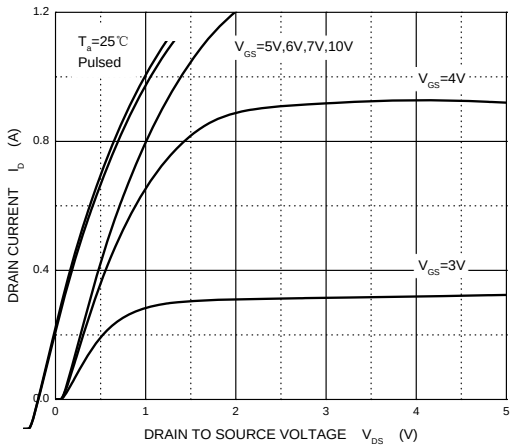
Electrical Characteristics (T_a=25℃unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static Characteristics						
Drain-Source Breakdown Voltage	V_{DS}	V_{GS} = 0V, I_D =250μA	60			V
Gate Threshold Voltage*	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =1mA	1	1.3	2.5	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =48V,V_{GS} = 0V			1	μA
Gate –Source leakage current	I_{GSS1}	V_{GS} =±20V, V_{DS} = 0V			±10	μA
Drain-Source On-Resistance*	$R_{DS(on)}$	V_{GS} = 4.5V, I_D =200mA		1.1	5.3	Ω
		V_{GS} =10V,I_D =500mA		0.9	5	Ω
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=300mA			1.5	V
Recovered charge	Q_r	V_{GS}=0V,I_S=300mA,V_R=25V, dI_S/dt=-100A/μs		30		nC
Dynamic Characteristics**						
Input Capacitance	C_{iss}	V_{DS} =10V,V_{GS} =0V,f =1MHz			40	pF
Output Capacitance	C_{oss}				30	pF
Reverse Transfer Capacitance	C_{rss}				10	pF
Switching Characteristics**						
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V,V_{DD}=50V,R_G=50Ω, R_{GS}=50Ω, R_L=250Ω			10	ns
Turn-Off Delay Time	$t_{d(off)}$				15	ns
Reverse recovery Time	t_{rr}	V_{GS}=0V,I_S=300mA,V_R=25V, dI_S/dt=-100A/μs		30		ns
GATE-SOURCE ZENER DIODE						
Gate-Source Breakdown Voltage	BV_{GSO}	I_{gs}=±1mA (Open Drain)	±21.5		±30	V

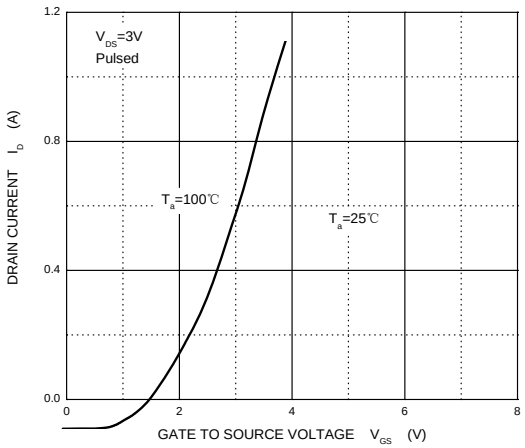
Notes :
*Pulse Test : Pulse Width ≤300μs, Duty Cycle ≤2%.
**These parameters have no way to verify.

RATING AND CHARACTERISTIC CURVES

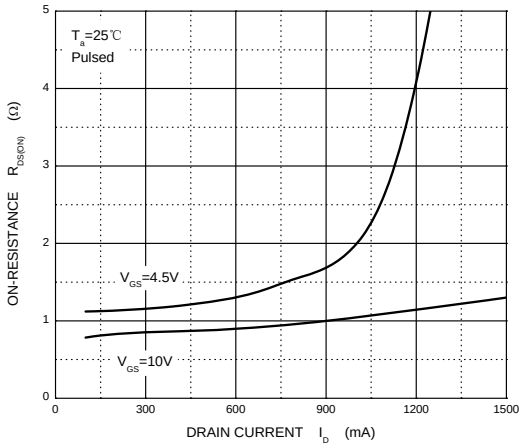
Output Characteristics



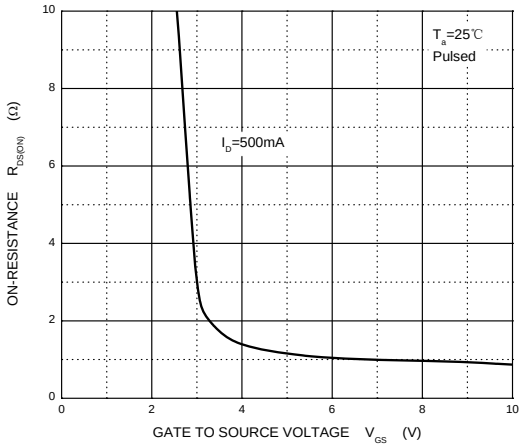
Transfer Characteristics



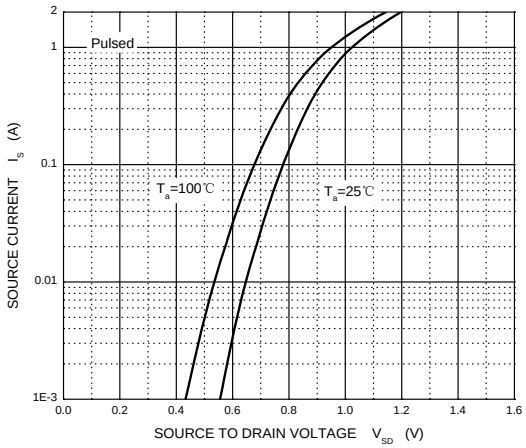
$R_{DS(ON)}$ — I_D



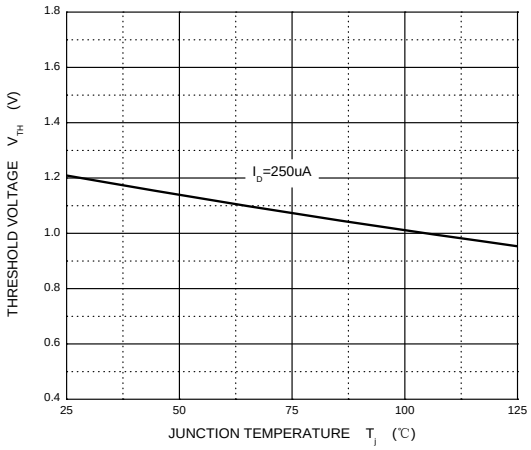
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



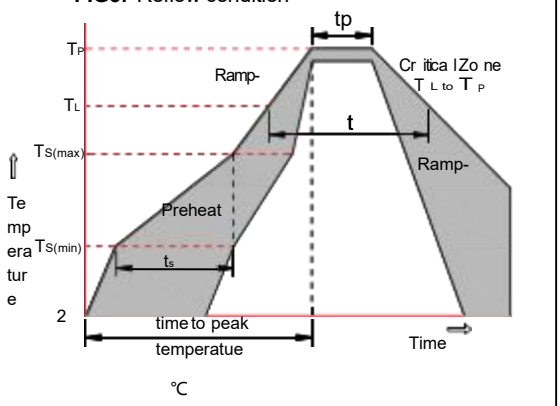
Threshold Voltage



Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG5: Reflow condition



Package Dimensions & Suggested Pad Layout

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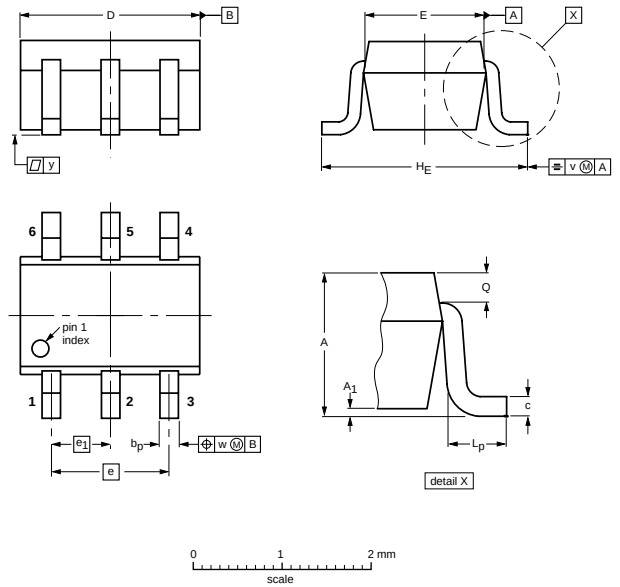
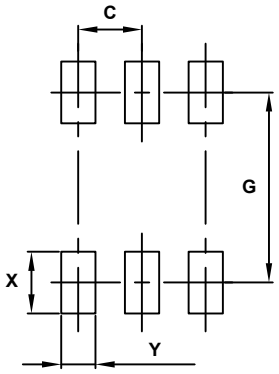




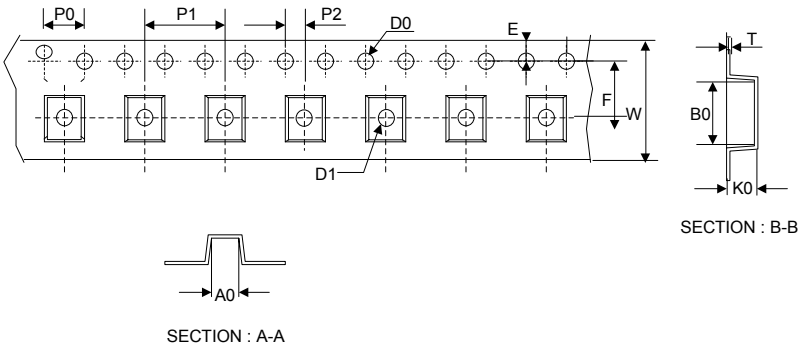
Dimensions	Value (in mm)
C	0.65
G	1.90
X	0.85
Y	0.40

DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

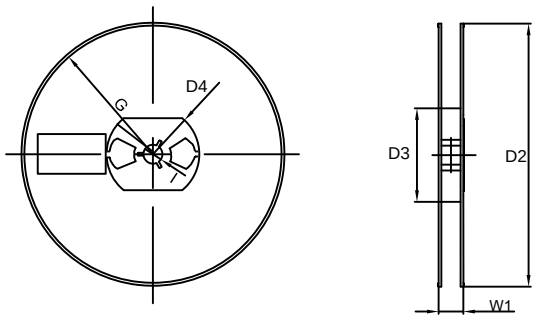
Tape & rell specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	4.00±0.20
P2	2.00±0.20
D0	1.55±0.20
D1	1.00±0.20
E	1.55±0.25
F	3.60±0.20
W	8.00±0.20
A0	3.00±0.20
B0	3.00±0.20
K0	1.30±0.20
T	0.20±0.20

7" Reel



D2	177.0±5.0
D3	55Min.
D4	R24.6±2.0
G	R82.0±2.0
I	13.0±2.0
W1	10.20±3.0
Quantity: 3000PCS	

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