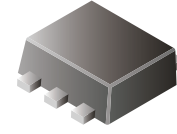


CJX3139K-G

**P-Channel
RoHS Device**



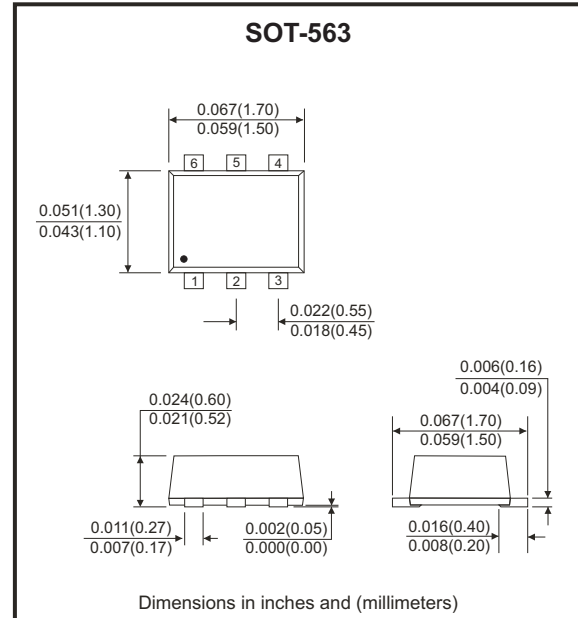
$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-20V	520mΩ@-4.5V	-0.66A
	700mΩ@-2.5V	
	950mΩ(Typ.)@-1.8V	

Features

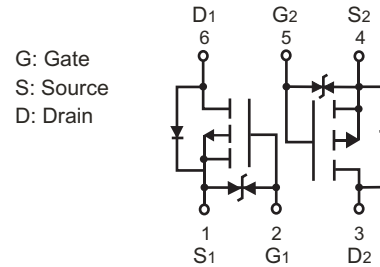
- High-side switching.
- Low on-resistance.
- Low threshold.
- Fast switching speed.

Mechanical data

- Case: SOT-563, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026.



Circuit diagram



Maximum Ratings (at $T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Units
Drain-source voltage	V_{DSS}	-20	V
Typical gate-source voltage	V_{GS}	± 12	V
Drain current-continuous	$I_{D(DC)}$	-0.66	A
Drain current-pulsed (Note 1)	$I_{DM(pules)}$	-2.64	A
Power dissipation (Note 2)	P_D	150	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	833	$^\circ\text{C/W}$
Junction temperature	T_J	150	$^\circ\text{C}$
Storage temperature	T_{STG}	-55 to +150	$^\circ\text{C}$

Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at $T_a=25^\circ\text{C}$.

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Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
On/Off States						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate threshold voltage (Note 3)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.35		-1.1	V
Gate-body leakage current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$			± 20	μA
Zero gate voltage drain current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$			-1	μA
Drain-source on-states resistance (Note 3)	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-1A$			520	m Ω
		$V_{GS}=-2.5V, I_D=-800mA$			700	m Ω
		$V_{GS}=-1.8V, I_D=-500mA$		950		m Ω
Forward transconductance	g_{FS}	$V_{DS}=-10V, I_D=-540mA$	0.8			S
Dynamic characteristics (Note 4)						
Input capacitance	C_{iss}	$V_{DS}=-16V, V_{GS}=0V, f=1MHz$			170	pF
Output capacitance	C_{oss}				25	pF
Reverse transfer capacitance	C_{rss}				15	pF
Switching times (Note 4)						
Turn-on delay time	$t_{d(on)}$	$V_{DD}=-10V, I_D=-200mA$ $V_{GS}=-4.5V, R_G=10\Omega$		9		nS
Rise time	t_r			5.8		nS
Turn-off delay time	$t_{d(off)}$			32.7		nS
Fall time	t_f			20.3		nS
Drain-source diode characteristics						
Diode forward voltage (Note 3)	V_{SD}	$I_S=-0.5A, V_{GS}=0V$			-1.2	V

Note:

3. Pulse Test: Pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.

4. These parameters have no way to verify.

TYPICAL RATING AND CHARACTERISTIC CURVES (CJX3139K-G)

Fig.1 - Output Characteristics

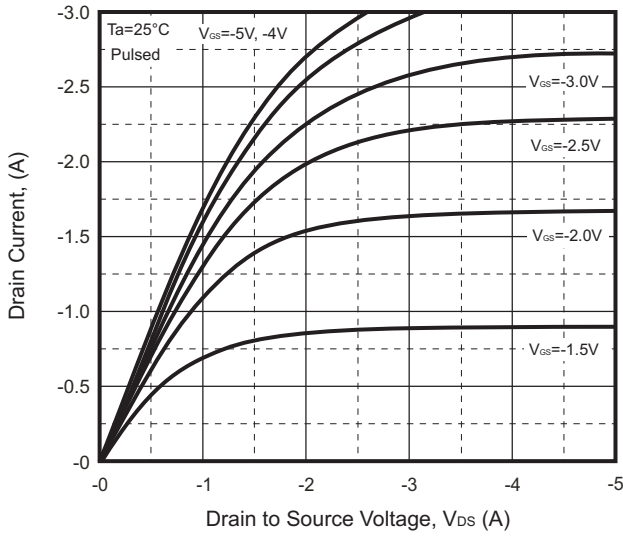


Fig.2 - Transfer Characteristics

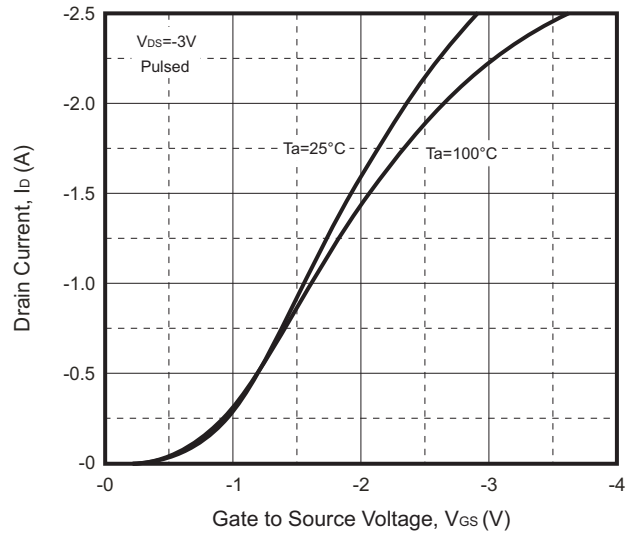


Fig.3 - $R_{DS(ON)}$ — I_D

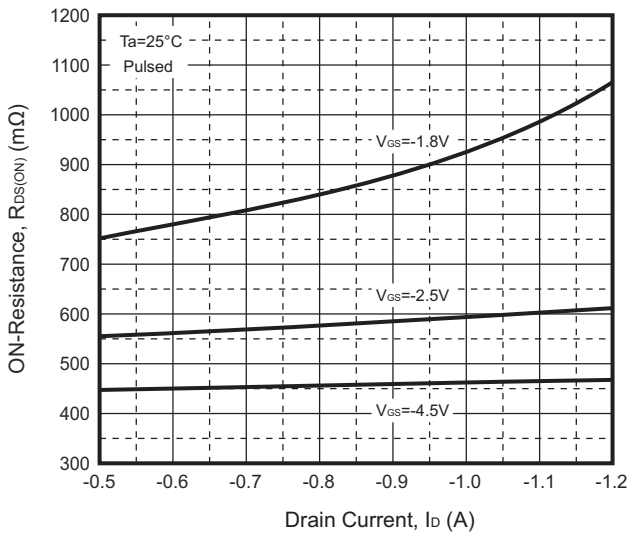


Fig.4 - $R_{DS(ON)}$ — V_{GS}

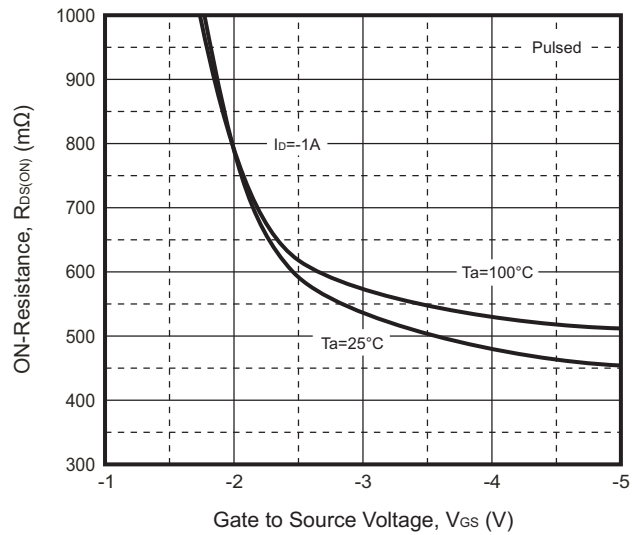


Fig.5 - I_S — V_{SD}

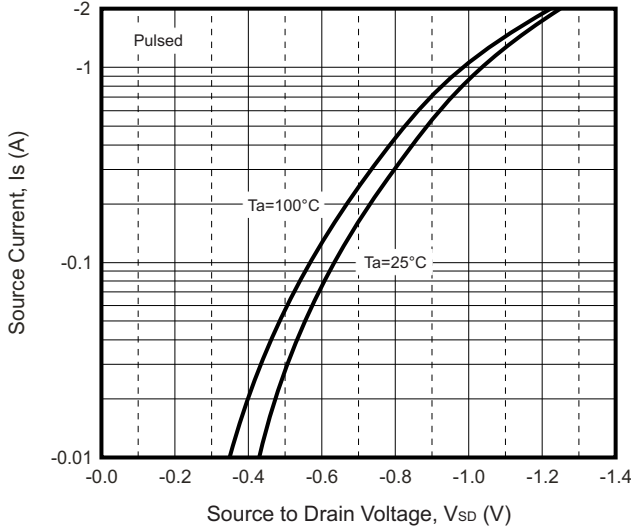
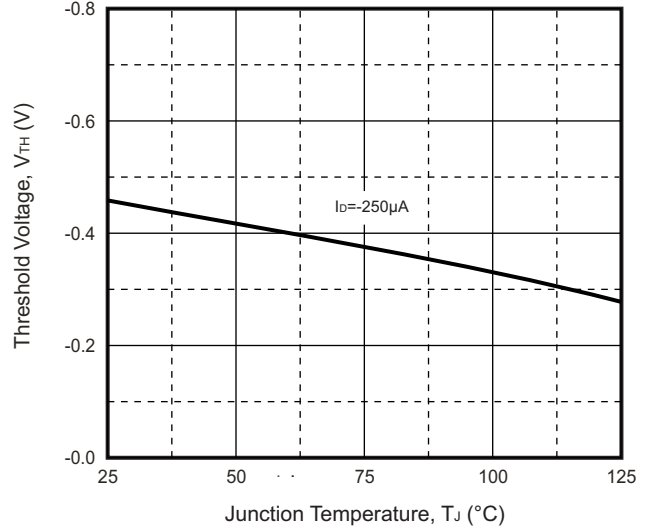


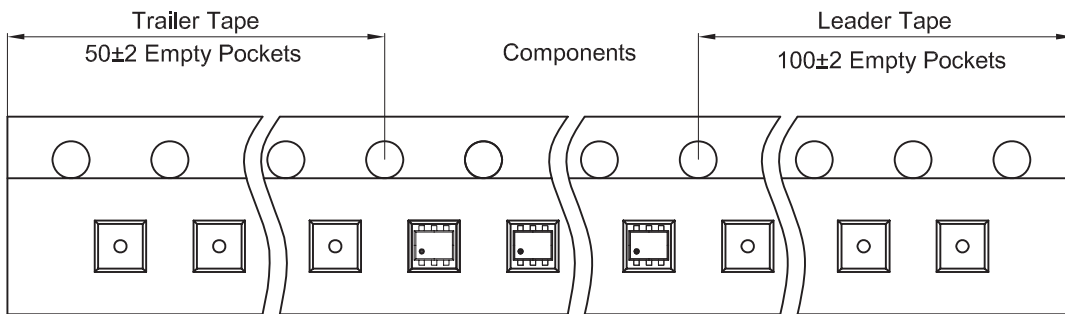
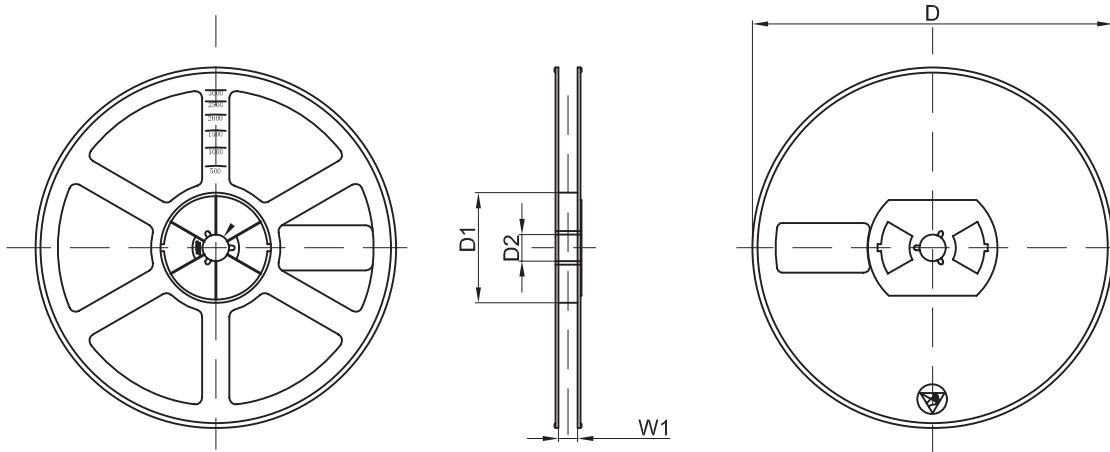
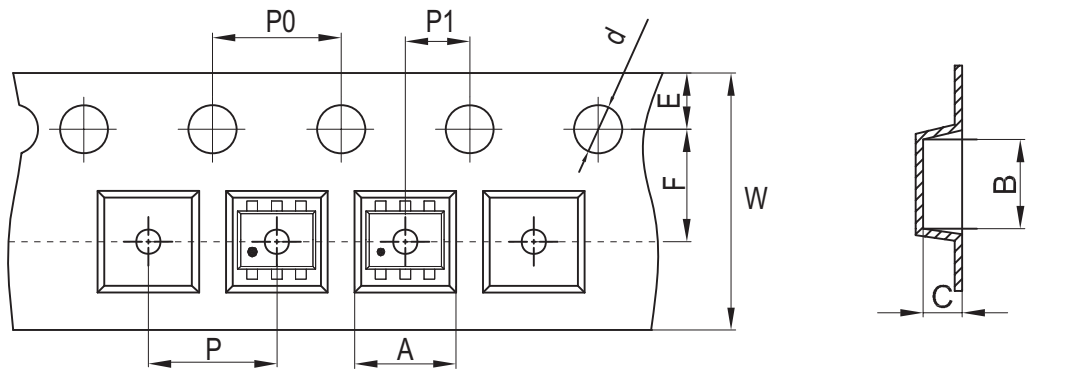
Fig.6 - Threshold Voltage



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REV: A

Reel Taping Specification



SOT-563	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	1.78 ± 0.10	1.78 ± 0.10	0.69 ± 0.10	1.50 ± 0.10	178 ± 2.0	54.40 ± 1.0	13.00 ± 1.0
	(inch)	0.070 ± 0.004	0.070 ± 0.004	0.027 ± 0.004	0.059 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

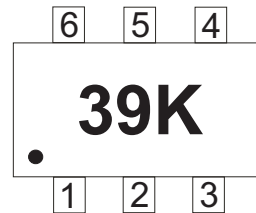
SOT-563	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 ± 0.10	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.158 ± 0.004	0.158 ± 0.004	0.079 ± 0.004	0.315 ± 0.004	0.374 ± 0.039

Company reserves the right to improve product design, functions and reliability without notice.

REV: A

Marking Code

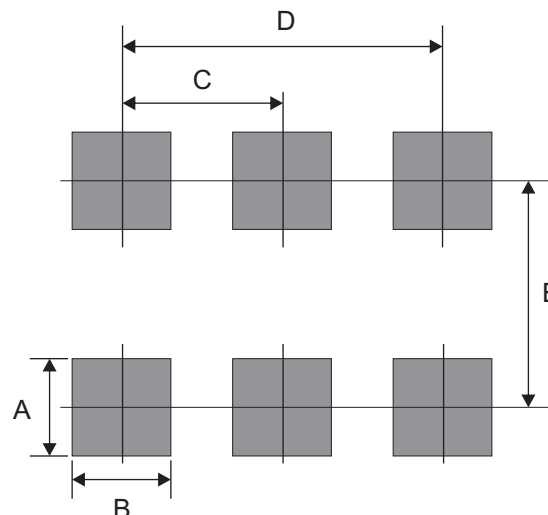
Part Number	Marking Code
CJX3139K-G	39K



Solid dot “●” = Pin 1 indicate.

Suggested PAD Layout

SIZE	SOT-563	
	(mm)	(inch)
A	0.30	0.012
B	0.30	0.012
C	0.50	0.020
D	1.00	0.039
E	1.40	0.055



Note:

- 1.General tolerance: $\pm 0.05\text{mm}$.
- 2.The pad layout is for reference purposes only.

Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-563	3,000	7