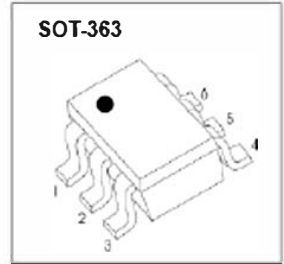


# SOT-363 Plastic-Encapsulate MOSFETS

## CJ3139KDW Dual P-Channel Power MOSFET

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



### GENERAL DESCRIPTION

This Dual P-Channel MOSFET has been designed using advanced Power Trench process to optimize the  $R_{DS(on)}$ .

Including two P-ch CJ3139K MOSFET (independently) in a package.

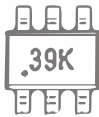
### FEATURE

- High-Side Switching
- Low On-Resistance
- Low Threshold
- Fast Switching Speed

### APPLICATION

- Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Memories
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones, Pagers

### MARKING



### Equivalent Circuit



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

Parameter	Symbol	Value	Unit
Drain-Source voltage	$V_{DSS}$	-20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	
Drain Current-Continuous	$I_{D(PCM)}$	-0.66	A
Drain Current -Pulsed(note 1)	$I_{DM(pulse)}$	-2.64	
Power Dissipation (note 2)	$P_D$	150	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^\circ\text{C/W}$
Storage Temperature	$T_J$	150	$^\circ\text{C}$
Junction Temperature	$T_{seg}$	-55 ~ +150	

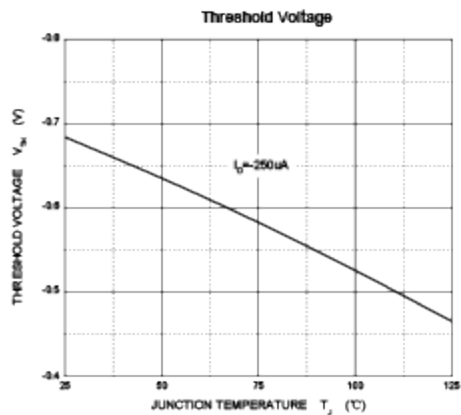
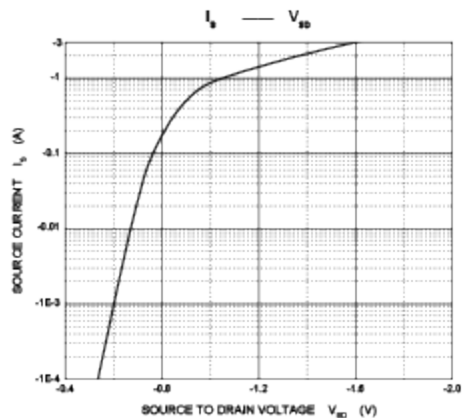
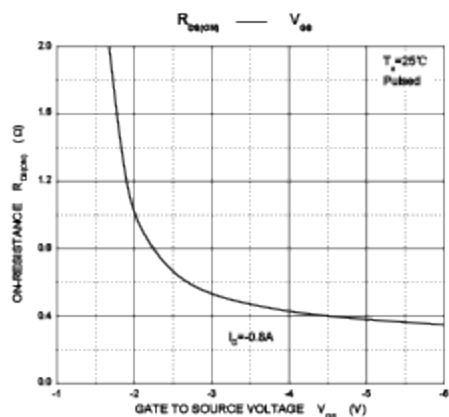
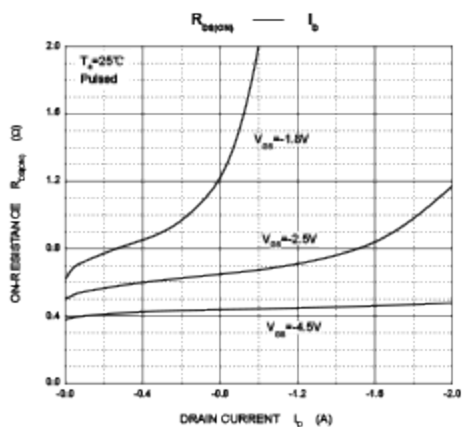
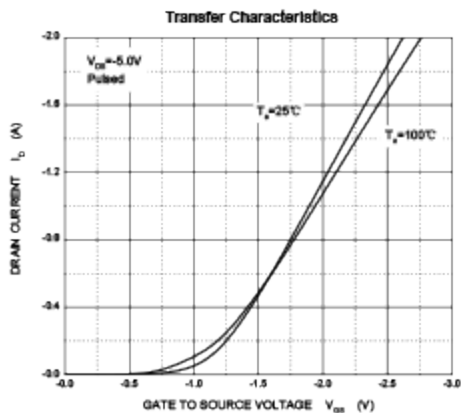
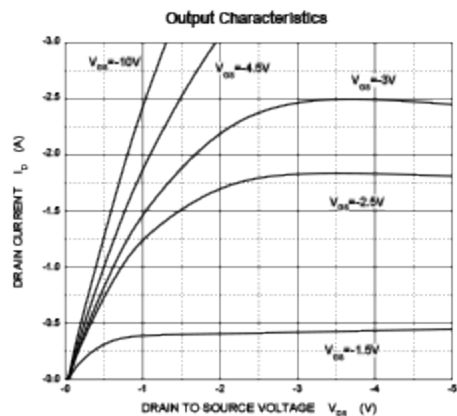
## MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25^\circ\text{C}$  unless otherwise specified

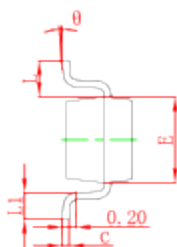
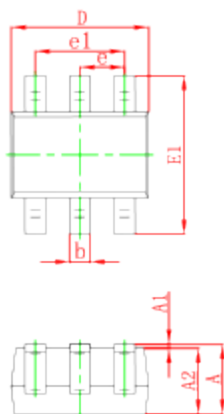
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>On/Off States</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Gate-Threshold Voltage(note 3)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.35		-1.1	
Gate-Body Leakage Current	$I_{GBSS}$	$V_{DS} = 0V, V_{GS} = \pm 12V$			$\pm 20$	$\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0V$			-1	$\mu A$
Drain-Source On-State Resistance(note 3)	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -1A$			520	m $\Omega$
		$V_{GS} = -2.5V, I_D = -800mA$			700	
		$V_{GS} = -1.8V, I_D = -500mA$			950	
Forward Transconductance	$g_{fs}$	$V_{GS} = -10V, I_D = -540mA$	0.8			S
<b>Dynamic Characteristics(note 4)</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = -16V, V_{GS} = 0V, f = 1MHz$			170	pF
Output Capacitance	$C_{oss}$				25	
Reverse Transfer Capacitance	$C_{rss}$				15	
<b>Switching Times (note 4)</b>						
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		
Turn-Off Delay Time	$t_{d(off)}$			32.7		
Fall Time	$t_f$			20.3		
<b>Drain-Source Diode Characteristics</b>						
Drain-Source Diode Forward Voltage (note 3)	$V_{SD}$	$I_S = -0.5A, V_{GS} = 0V$			-1.2	V

### Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at  $T_a=25^\circ\text{C}$ .
3. Pulse Test : Pulse Widths $\leq 300\mu s$ , Duty Cycles $\leq 0.5\%$ .
4. These parameters have no way to verify.

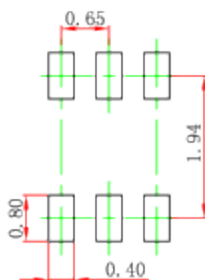


## SOT-363 Package Outline Dimensions



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
$\theta$	0°	8°	0°	8°

## SOT-363 Suggested Pad Layout



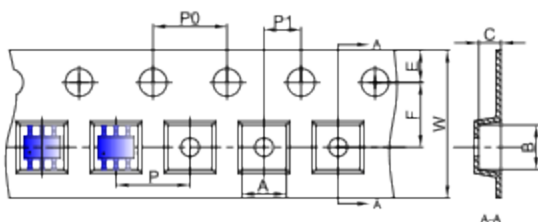
### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

## NOTICE

JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

## SOT-363 Embossed Carrier Tape

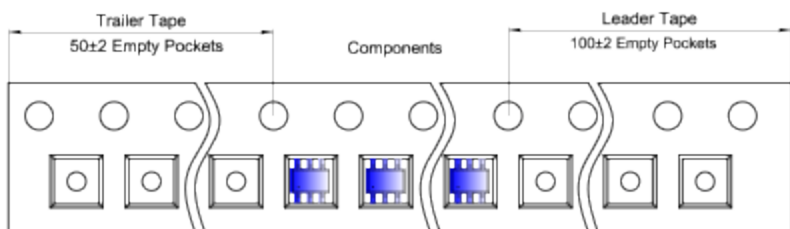


### Packaging Description:

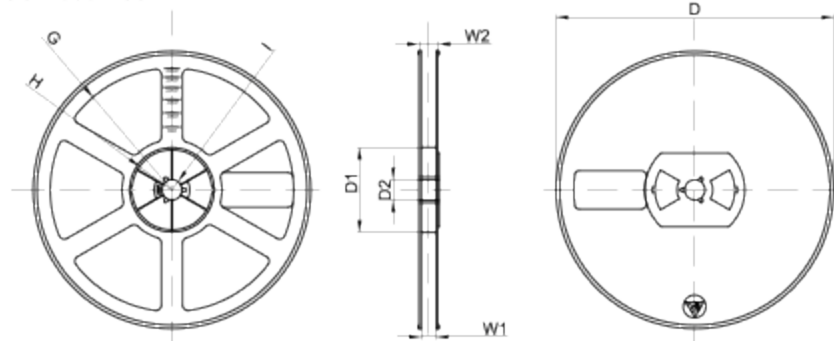
SOT-363 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-363	2.25	2.55	1.20	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

## SOT-363 Tape Leader and Trailer



## SOT-363 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	