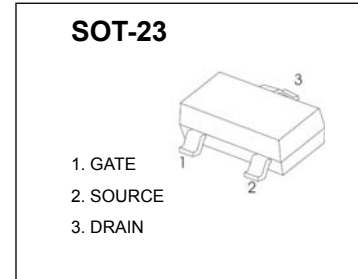




## SOT-23 Plastic-Encapsulate MOSFETS

### CJ2305 P-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
-12V	45mΩ@-4.5V	-4.1A
	60mΩ@-2.5V	
	90mΩ@-1.8V	



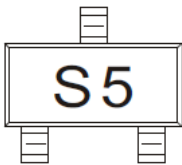
#### FEATURE

- TrenchFET Power MOSFET

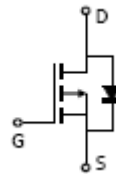
#### APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

#### MARKING



#### Equivalent Circuit



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-12	V
Gate-Source Voltage	$V_{GS}$	±8	
Continuous Drain Current	$I_D$	-4.1	A
Continuous Source-Drain Diode Current	$I_S$	-0.8	
Maximum Power Dissipation	$P_D$	0.35	W
Thermal Resistance from Junction to Ambient( $t \leq 10s$ )	$R_{\theta JA}$	357	$^{\circ}C/W$
Junction Temperature	$T_J$	150	$^{\circ}C$
Storage Temperature	$T_{STG}$	-50 ~ +150	

## MOSFET ELECTRICAL CHARACTERISTICS

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

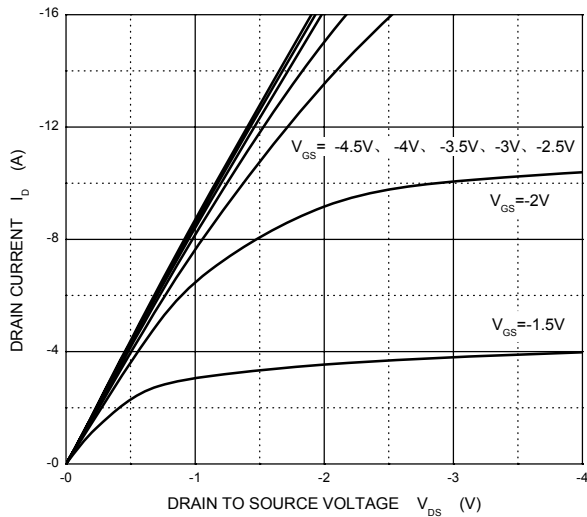
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
<b>Static</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-12			V
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.5		-0.9	
Gate-source leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 8V$			$\pm 100$	nA
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = -8V, V_{GS} = 0V$			-1	$\mu A$
Drain-source on-state resistance <sup>e</sup>	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -3.5A$		30	45	m $\Omega$
		$V_{GS} = -2.5V, I_D = -3A$		40	60	
		$V_{GS} = -1.8V, I_D = -2.0A$		60	90	
Forward transconductance <sup>a</sup>	$g_{fs}$	$V_{DS} = -5V, I_D = -4.1A$	6			S
<b>Dynamic</b>						
Input capacitance <sup>b,c</sup>	$C_{iss}$	$V_{DS} = -4V, V_{GS} = 0V, f = 1MHz$		740		pF
Output capacitance <sup>b,c</sup>	$C_{oss}$			290		
Reverse transfer capacitance <sup>b,c</sup>	$C_{rss}$			190		
Total gate charge <sup>b</sup>	$Q_g$	$V_{DS} = -4V, V_{GS} = -4.5V, I_D = -4.1A$		7.8	15	nC
		$V_{DS} = -4V, V_{GS} = -2.5V, I_D = -4.1A$		4.5	9	
Gate-source charge <sup>b</sup>	$Q_{gs}$	$V_{DS} = -4V, V_{GS} = -2.5V, I_D = -4.1A$		1.2		
Gate-drain charge <sup>b</sup>	$Q_{gd}$			1.6		
Gate resistance <sup>b,c</sup>	$R_g$	$f = 1MHz$	1.4	7	14	$\Omega$
Turn-on delay time <sup>b,c</sup>	$t_{d(on)}$	$V_{DD} = -4V, R_L = 1.2\Omega, I_D \approx -3.3A, V_{GEN} = -4.5V, R_g = 1\Omega$		13	20	ns
Rise time <sup>b,c</sup>	$t_r$			35	53	
Turn-off Delay time <sup>b,c</sup>	$t_{d(off)}$			32	48	
Fall time <sup>b,c</sup>	$t_f$			10	20	
Turn-on delay time <sup>b,c</sup>	$t_{d(on)}$	$V_{DD} = -4V, R_L = 1.2\Omega, I_D \approx -3.3A, V_{GEN} = -8V, R_g = 1\Omega$		5	10	
Rise time <sup>b,c</sup>	$t_r$			11	17	
Turn-off delay time <sup>b,c</sup>	$t_{d(off)}$			22	33	
Fall time <sup>b,c</sup>	$t_f$			16	24	
<b>Drain-source body diode characteristics</b>						
Continuous source-drain diode current	$I_S$	$T_C = 25^\circ C$			-1.4	A
Pulse diode forward current <sup>a</sup>	$I_{SM}$				-10	
Body diode voltage	$V_{SD}$	$I_F = -3.3A$			-1.2	V

**Note :**

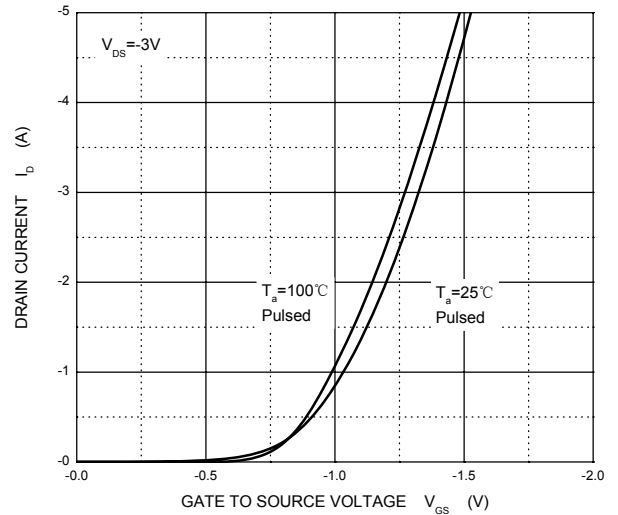
- a. Pulse Test ; Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
- b. Guaranteed by design, not subject to production testing.
- c. These parameters have no way to verify.

# Typical Characteristics

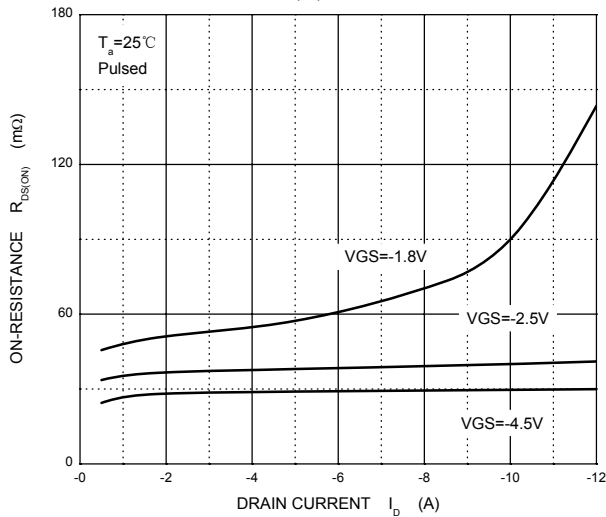
Output Characteristics



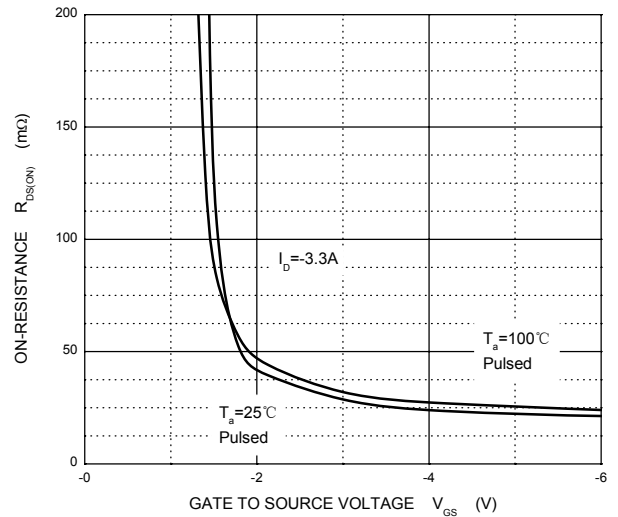
Transfer Characteristics



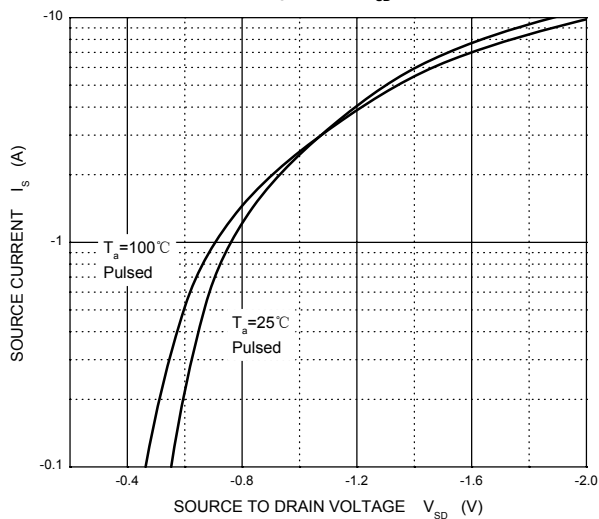
$R_{DS(ON)}$  —  $I_D$



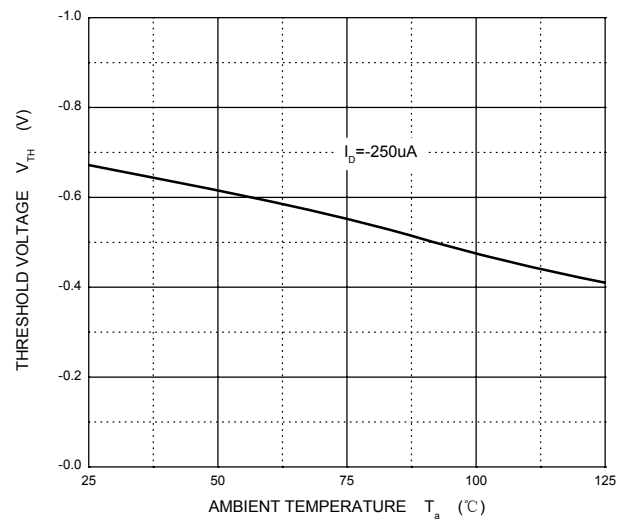
$R_{DS(ON)}$  —  $V_{GS}$



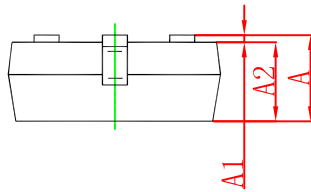
$I_S$  —  $V_{SD}$



Threshold Voltage



## SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
$\theta$	0°	8°	0°	8°

## SOT-23 Suggested Pad Layout



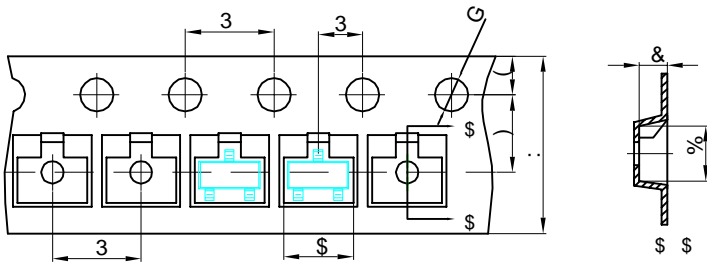
- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.

### 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.

627 7DSH DQG UHHO

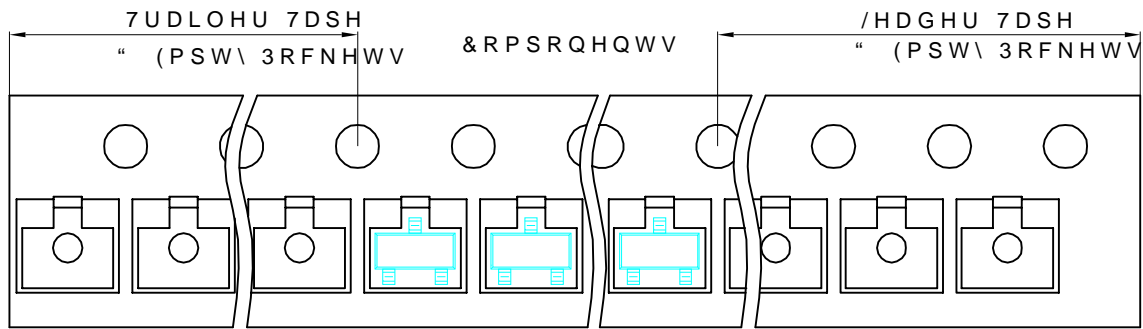
627 (PERVVHG &DUULHU 7DSH



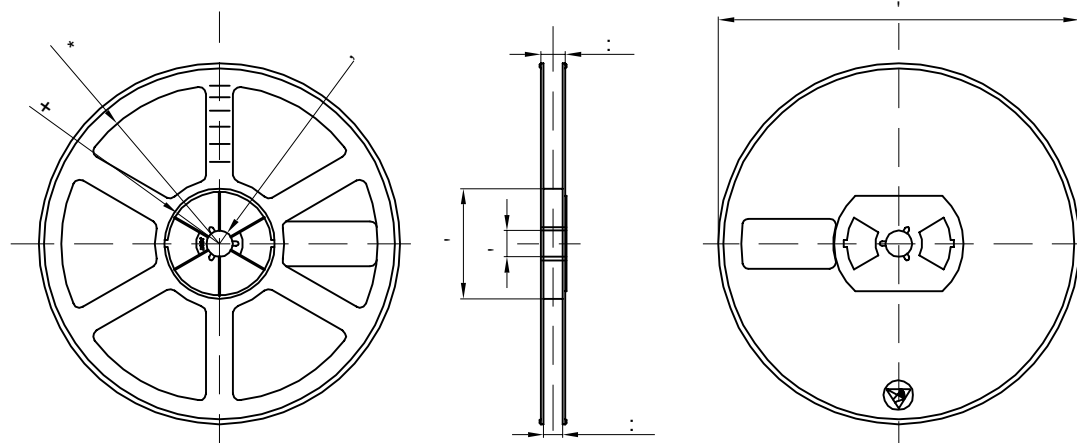
3DFNDJLQJ 'HVFULSWLRQ  
 627 SDUWV DUH VKLSSHG LQ WDSH  
 WDSH LV PDGH IURP D GLVVLSDWLYH FDUE  
 SRO\FDUERQDWH UHVLQ 7KH FRYHU WDSH  
 ILOP +HDW \$FWLYDWHG \$GKHVLYH LQ QDW  
 FRPSRVHG RI SRO\HVWHU ILOP DGKHVLYH  
 DQG DQWL VWDWLF VSUD\HG DJHQW 7KHV  
 VWDQGDUG RSWLRQ DUH VKLSSHG ZLWK  
 RU FP GLDPWHU UHHO 7KH UHHOV DUH  
 DQG LV PDGH RI SRO\UHQH SODWLF D  
 FRDWHG

'LPHQVLRQV DUH LQ PLOOLPHWHU										
3NJ W\SH	\$	%	&	G	(	)	3	3	3	:
627										

627 7DSH /HDGHU DQG 7UDLOHU



627 5HHO



'LPHQVLRQV DUH LQ PLOOLPHWHU										
5HHO 2SWLRQ				*	+	,	:	:		
'LD				5	5	5				

5(//	5HHO 6L]H	%R[	%R[ 6L]H	PP	&DUWRQ	&DUWRQ	6L]H	*P:P	NJ
SFV	LQFK	SFV	i i		SFV	i i			