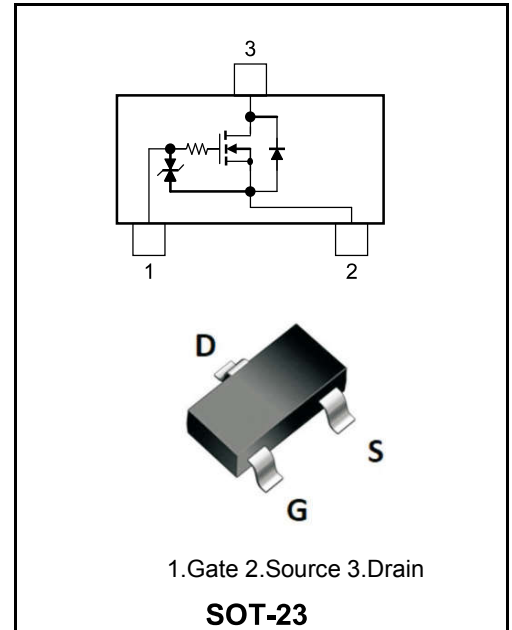


■N-Channel Enhancement Mode
Features

- ESD protected gate
- Low ON-resistance
- $R_{DS(on)} = 2.8 \Omega$ (typ.) (@ $V_{GS} = 10 V$)
- $R_{DS(on)} = 3.1 \Omega$ (typ.) (@ $V_{GS} = 5 V$)
- $R_{DS(on)} = 3.2 \Omega$ (typ.) (@ $V_{GS} = 4.5 V$)

Absolute maximum ratings Ta=25°C

Characteristic		Symbol	Rating	Unit
Drain–source voltage		V_{DSS}	60	V
Gate–source voltage		V_{GSS}	± 20	V
Drain current (Note1)	DC	I_D	200	mA
	Pulse	I_{DP} (Note 2)	760	
Power dissipation		P_D (Note 3)	320	mW
		P_D (Note 4)	1000	
Channel temperature		T_{ch}	150	°C
Storage temperature		T_{stg}	-55 to 150	°C


Marking Code

YFW3422

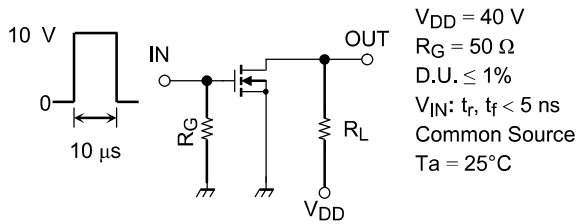
A27K

Electrical Characteristics Ta=25°C unless otherwise noted)

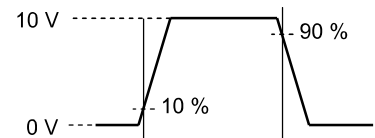
Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Drain-source breakdown voltage		$V_{(BR)DSS}$	$I_D = 250 \mu A, V_{GS} = 0 V$	60	—	—	V
Drain cutoff current		I_{DSS}	$V_{DS} = 60 V, V_{GS} = 0 V$	—	—	1	μA
			$V_{DS} = 60 V, V_{GS} = 0 V, T_j = 150^\circ C$	—	—	200	
Gate leakage current		I_{GSS}	$V_{GS} = \pm 16 V, V_{DS} = 0 V$	—	—	± 2	μA
			$V_{GS} = \pm 10 V, V_{DS} = 0 V$	—	—	± 0.5	
			$V_{GS} = \pm 5 V, V_{DS} = 0 V$	—	—	± 0.1	
Gate threshold voltage		V_{th}	$I_D = 250 \mu A, V_{DS} = V_{GS}$	1.1	—	2.1	V
Forward transfer admittance		$ Y_{fs} $	$V_{DS} = 10 V, I_D = 200 mA$ (Note 5)	—	450	—	mS
Drain-source ON-resistance		$R_{DS(ON)}$ (Note 5)	$I_D = 100 mA, V_{GS} = 10 V$	—	2.8	3.9	Ω
			$I_D = 100 mA, V_{GS} = 10 V, T_j = 150^\circ C$	—	5.4	8.1	
			$I_D = 100 mA, V_{GS} = 5 V$	—	3.1	4.4	
			$I_D = 100 mA, V_{GS} = 4.5 V$	—	3.2	4.7	
Total Gate Charge		$Q_{G(tot)}$	$V_{DS} = 30 V, I_D = 200 mA$ $V_{GS} = 4.5 V$	—	0.27	0.35	nC
Gate-Source Charge		Q_{GS}		—	0.08	—	
Gate-Drain Charge		Q_{GD}		—	0.08	—	
Input capacitance		C_{iss}	$V_{DS} = 10 V, V_{GS} = 0 V, f = 1 MHz$	—	11	17	pF
Output capacitance		C_{oss}		—	3	—	
Reverse transfer capacitance		C_{rss}		—	0.7	—	
Switching time	Turn-on delay time	$t_{d(on)}$	$V_{DD} = 40 V, I_D = 160 mA$ $V_{GS} = 0 V \text{ to } 10 V, R_G = 50 \Omega$	—	2	4	ns
	Rise time	t_r		—	3	—	
	Turn-off delay time	$t_{d(off)}$		—	7	14	
	Fall time	t_f		—	24	—	
Drain-source forward voltage		V_{DSF}	$I_D = -115 mA, V_{GS} = 0 V$ (Note 5)	—	-0.87	-1.2	V

Switching Time Test Circuit

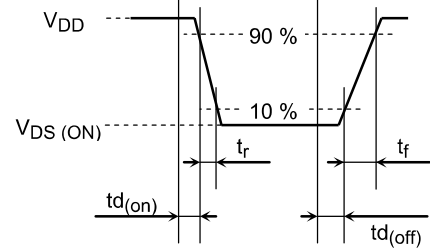
(a) Test Circuit



(b) V_{IN}



(c) V_{OUT}



Notice of Usage

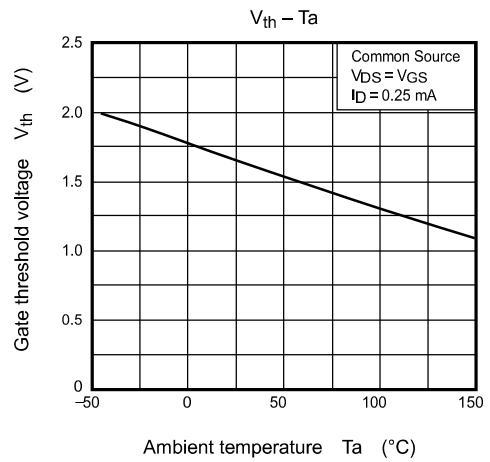
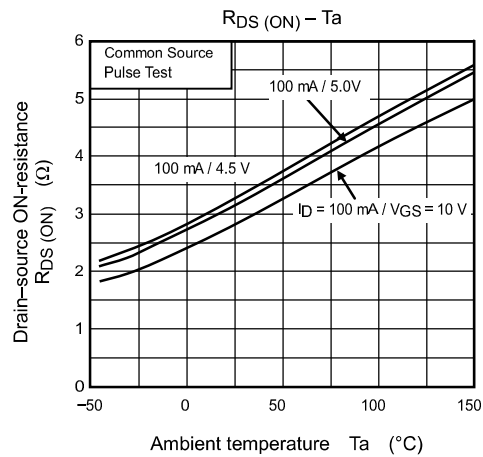
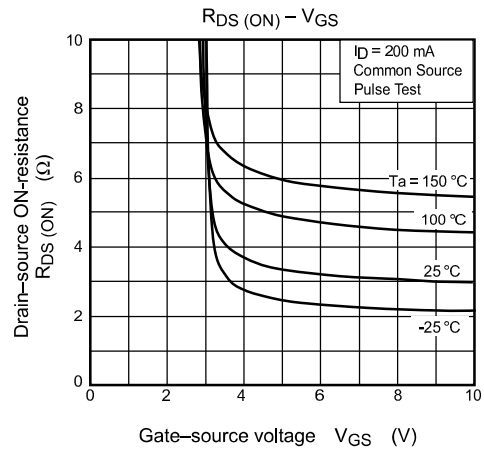
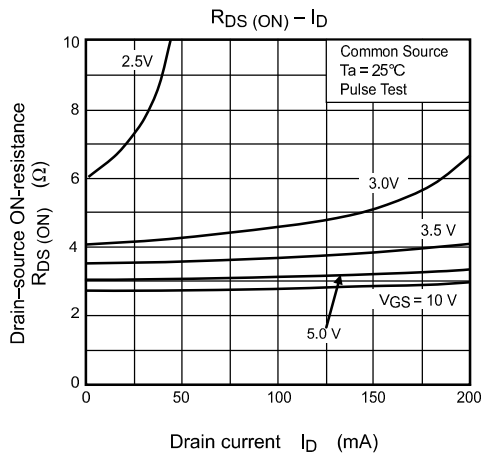
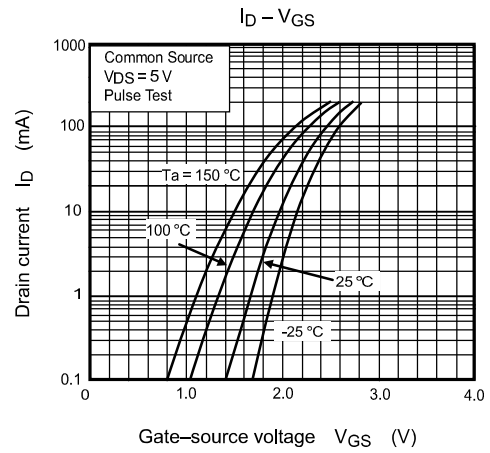
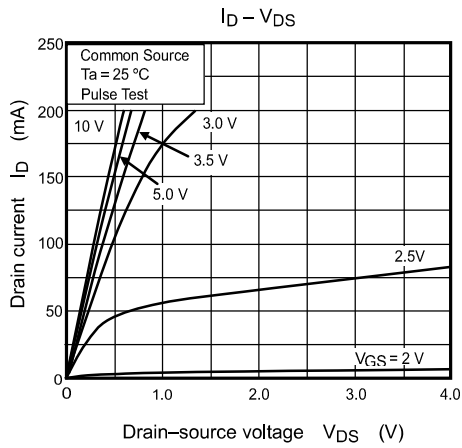
Let V_{th} be the voltage applied between gate and source that causes the drain current (I_D) to below (0.25 mA for this device). Then, for normal switching operation, $V_{GS(ON)}$ must be higher than V_{th} , and $V_{GS(OFF)}$ must be lower than V_{th} . This relationship can be expressed as: $V_{GS(OFF)} < V_{th} < V_{GS(ON)}$.

Take this into consideration when using the device.

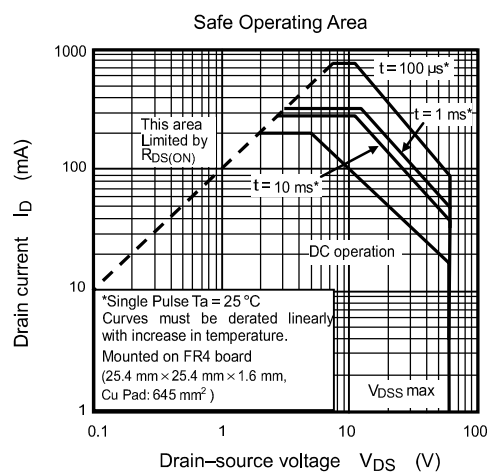
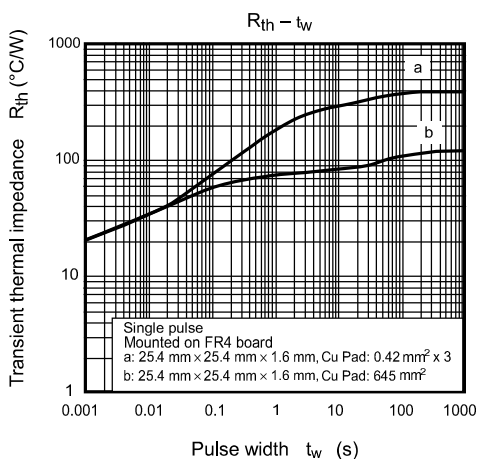
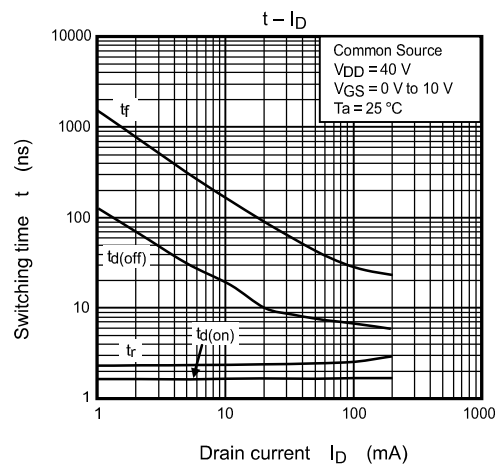
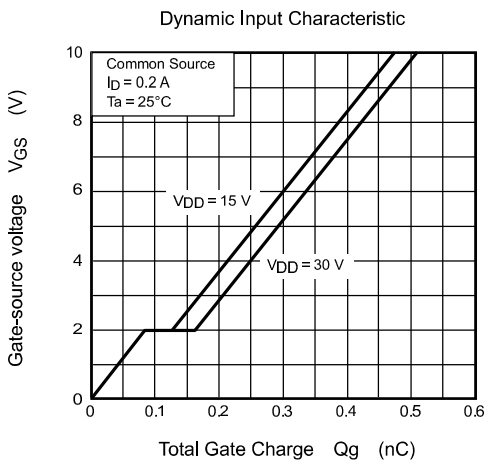
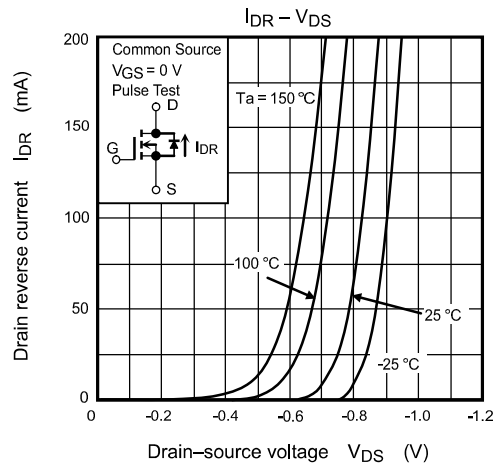
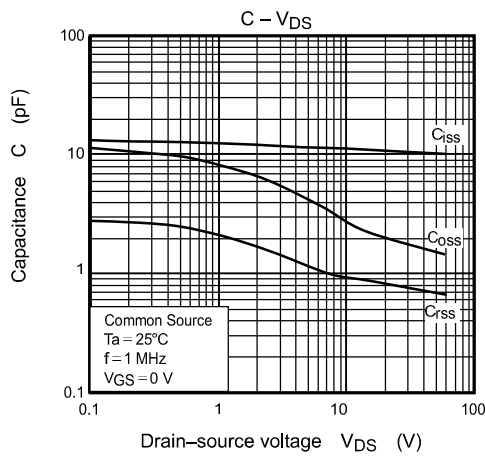
Handling Precaution

The MOSFETs in this device are sensitive to electrostatic discharge. When handling this device, the worktables, operators, soldering irons and other objects should be protected against anti-static discharge.

Ratings and Characteristic Curves



Ratings and Characteristic Curves



Note: The above characteristics curves are presented for reference only and not guaranteed by production test.

Ordering information

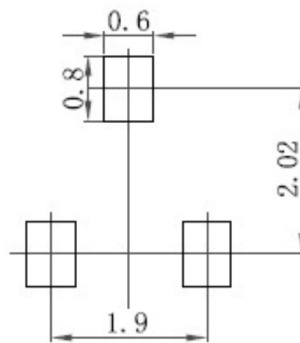
Package	Packing Description	Base Quantity	Packing Quantity
SOT23-3L	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT23-3L

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	1.05	1.25	41	49.2
A1	0.10		3.93	
A2	1.05	1.15	41	45
b	0.30	0.50	12	20
c	0.10	0.20	3.93	7.9
D	2.82	3.02	111	119
E	1.50	1.70	59	67
E1	2.65	2.95	104	116
e	0.95		37.4	
e1	1.80	2.00	71	78
L	0.30	0.066	12	26
Θ	8°			

The recommended mounting pad size



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