

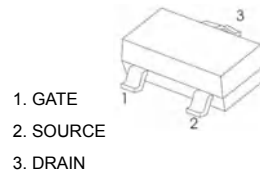
FEATURES

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

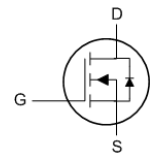
V_{DSS} 100 V
 I_D 1.5 A
 $R_{DS(ON)}$ 195m Ω

D8HVV

SOT-23



Equivalent Circuit



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter		Symbol	5 sec	Steady State	Unit
Drain-Source Voltage		V_{DS}	100		V
Gate-Source Voltage		V_{GS}	± 20		
Continuous Drain Current *1	$T_a=25^\circ\text{C}$	I_D	1.5	1.15	A
	$T_a=70^\circ\text{C}$		1.2	0.92	
Pulsed Drain Current *2		I_{DM}	6		
Avalanche Current *2		I_{AS}	6		
Single Avalanche Energy		E_{AS}	1.8		mJ
Power Dissipation *1	$T_a=25^\circ\text{C}$	P_D	1.25	0.73	W
	$T_a=70^\circ\text{C}$		0.8	0.47	
Thermal Resistance.Junction- to-Ambient *1 $t \leq 5$ sec		R_{thJA}	100		$^\circ\text{C/W}$
Steady State			170		
Thermal Resistance.Junction-to-Foot		R_{thJF}	55		
Junction Temperature		T_J	150		$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-55 to 150		

*1 Surface Mounted on 1" x 1" FR4 Board.

*2 Pulse width limited by maximum junction temperature

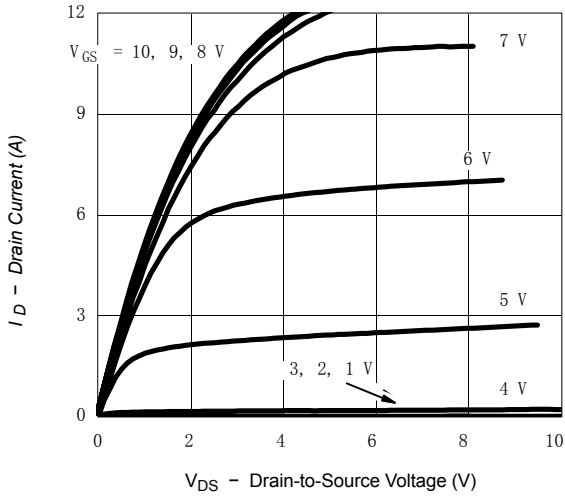
Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =1mA, V _{GS} =0V	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			1	μ A
		V _{DS} =100V, V _{GS} =0V, Ta=70°C			75	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μ A	2		4	V
On-State Drain Current *1	I _{D(on)}	V _{DS} ≥ 15 V, V _{GS} = 10 V	6			A
Static Drain-Source On-Resistance *1	R _{DS(on)}	V _{GS} =10V, I _D =1.5A		195	250	mΩ
Forward Transconductance *1	g _{FS}	V _{DS} =15V, I _D =1.5A		4		S
Gate Resistance	R _g		0.5		2.4	Ω
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =1.5A		3.3	4	nC
Gate Source Charge	Q _{gs}			0.47		
Gate Drain Charge	Q _{gd}			1.45		
Turn-On DelayTime	t _{d(on)}	I _D =0.2A, V _{DS} =50V, V _{GEN} =10V R _L =33Ω, R _G =6Ω		7	11	ns
Turn-On Rise Time	t _r			11	17	
Turn-Off DelayTime	t _{d(off)}			9	15	
Turn-Off Fall Time	t _f			10	15	
Body Diode Reverse Recovery Time	t _{rr}	I _F = 1.5A, di/dt= 100A/μ s		50	100	
Maximum Body-Diode Continuous Current	I _S				1.0	A
Diode Forward Voltage	V _{SD}	I _S =1.0A, V _{GS} =0V		0.8	1.2	V

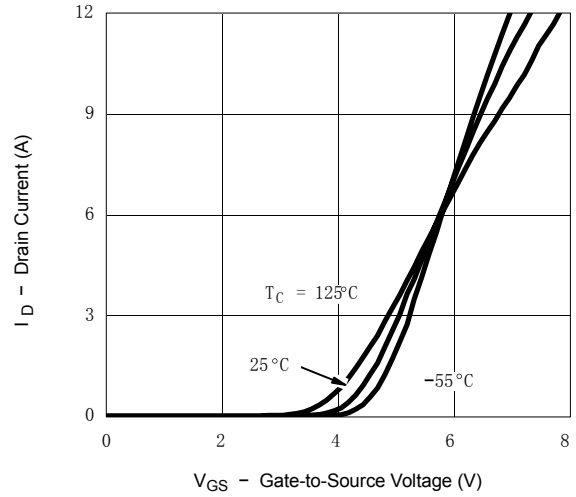
*1 Pulse test: PW ≤ 300us duty cycle ≤ 2%.

RATING AND CHARACTERISTIC CURVES

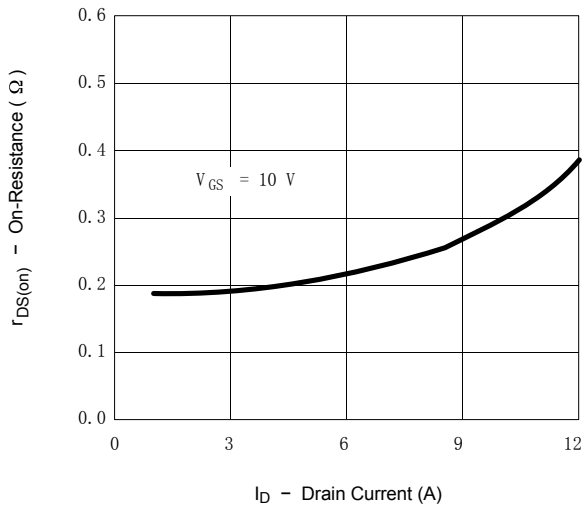
Output Characteristics



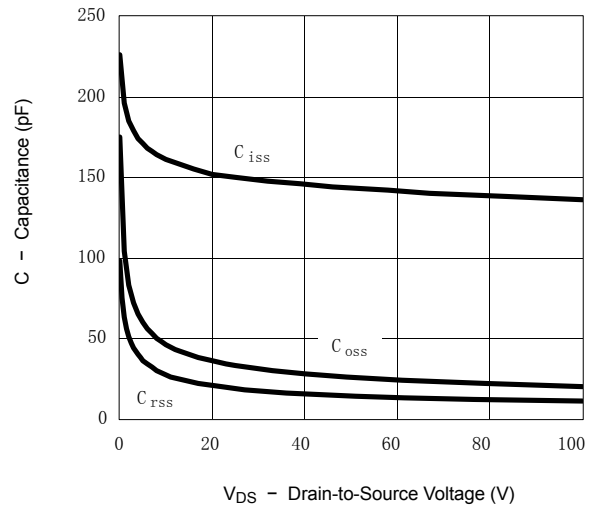
Transfer Characteristics



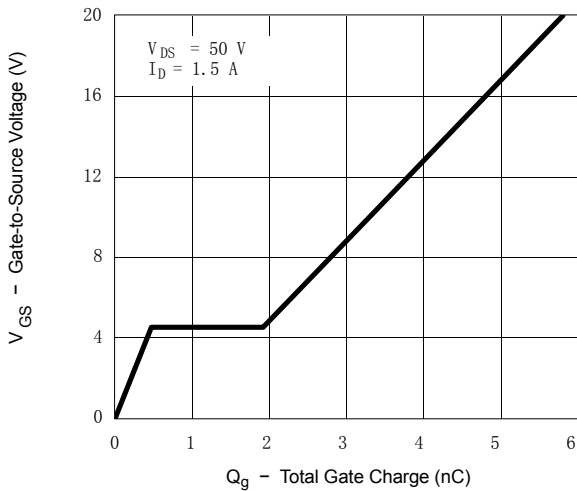
On-Resistance vs. Drain Current



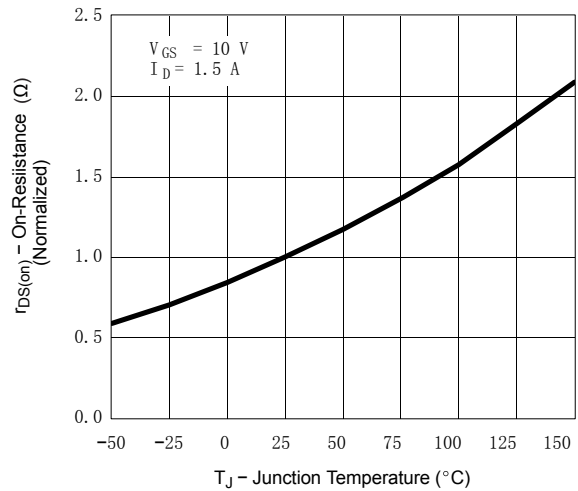
Capacitance



Gate Charge

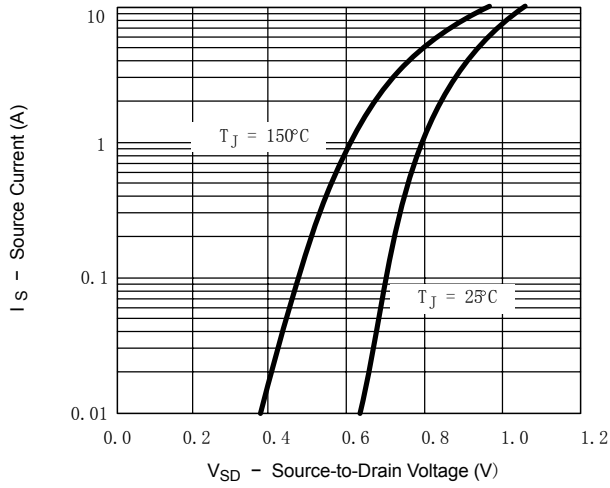


On-Resistance vs. Junction Temperature

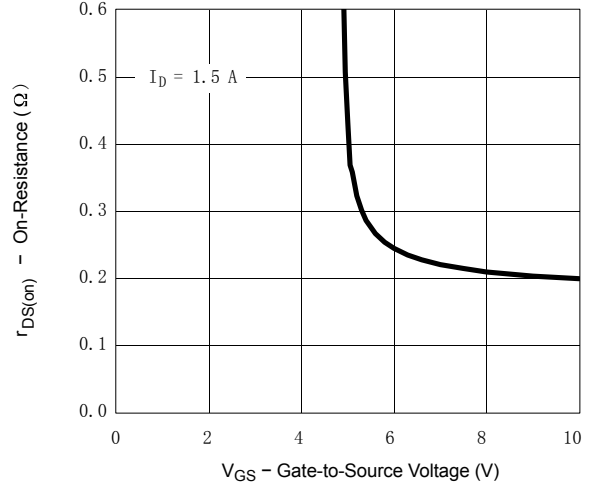


RATING AND CHARACTERISTIC CURVES

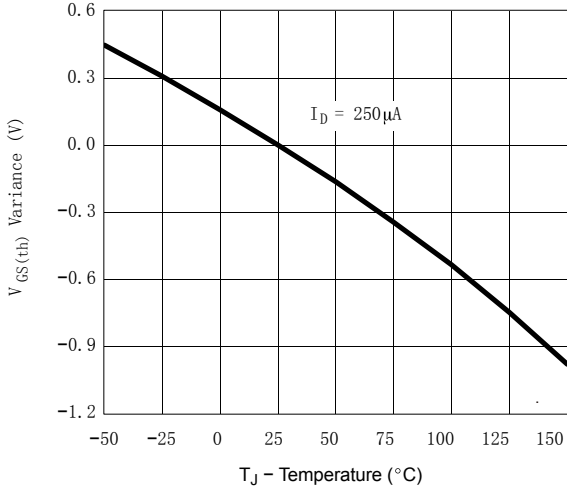
Source-Drain Diode Forward Voltage



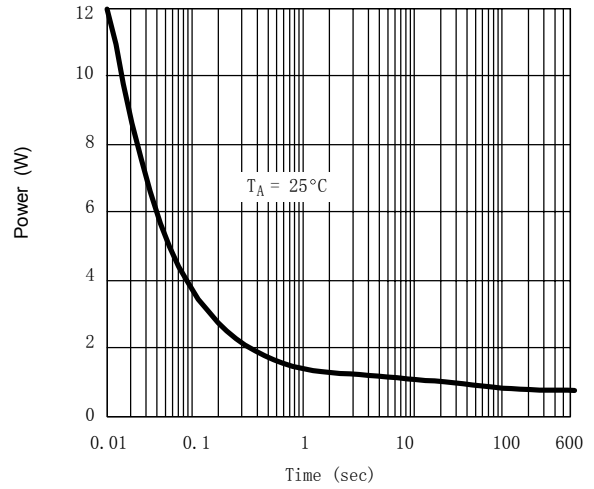
On-Resistance vs. Gate-to-Source Voltage



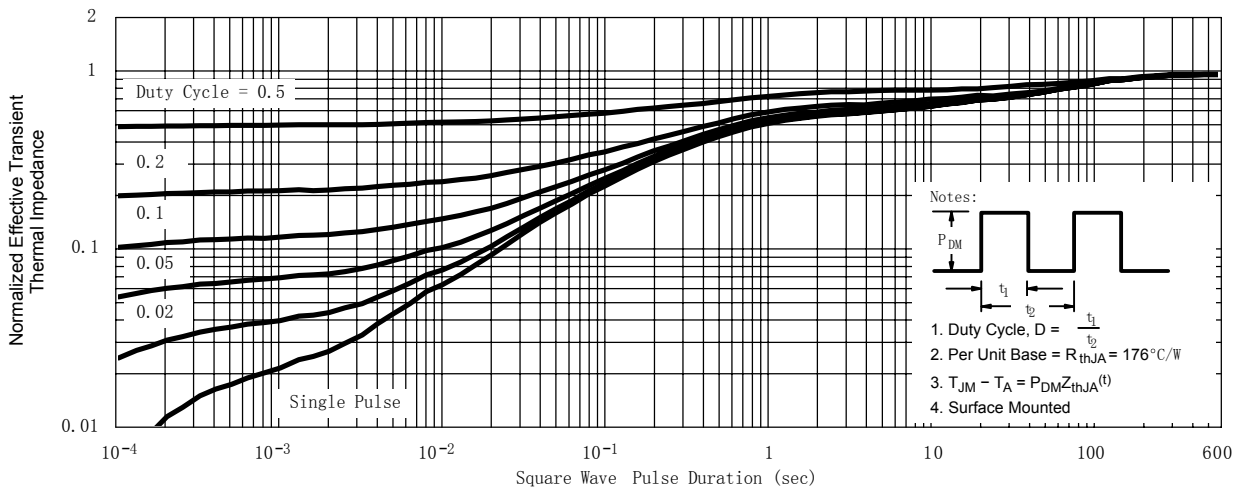
Threshold Voltage



Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient



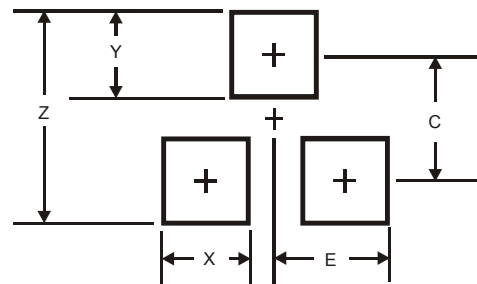
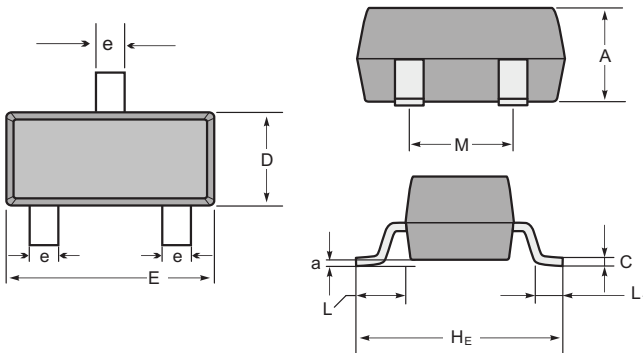
Soldering parameters

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



Package Dimensions & Suggested Pad Layout

SOT23



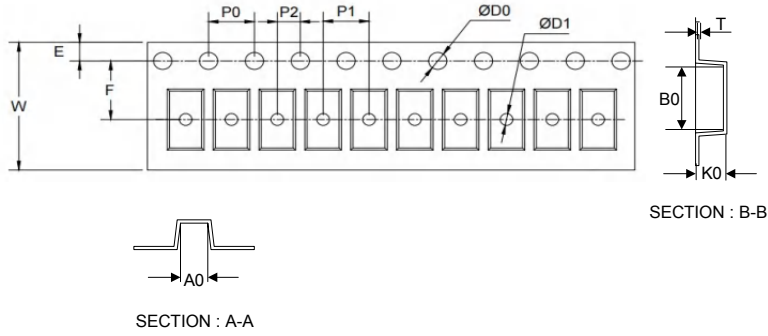
SOT-23 mechanical data

UNIT	A	C	D	E	HE	e	M	L	L1	a	
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

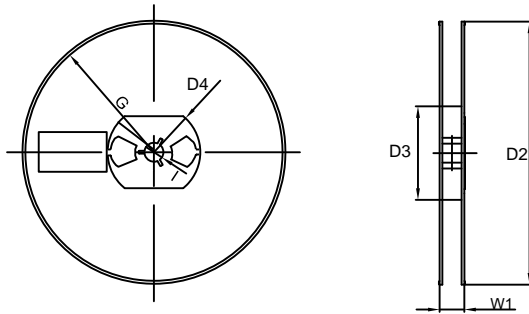
Tape & reel specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
D0	1.55±0.10
D1	1.05±0.10
E	1.55±0.10
F	3.60±0.10
W	8.00±0.10
A0	3.80±0.20
B0	3.25±0.20
K0	1.45±0.10
T	0.25±0.05
D2	178.0±3.0
D3	55Min.
D4	R24.0±3.0
G	R82.0±3.0
I	13.0±2.0
W1	11.0±3.0

7" Reel



Quantity: 3000PCS