

■ PRODUCT CHARACTERISTICS

VDSS	-20V
$R_{DS(on)Typ}(V_{GS} = -4.5V)$	32mΩ
$R_{DS(on)typ}(V_{GS} = -2.5V)$	40mΩ
ID	-4A

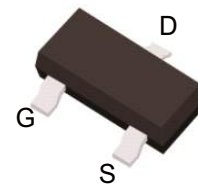
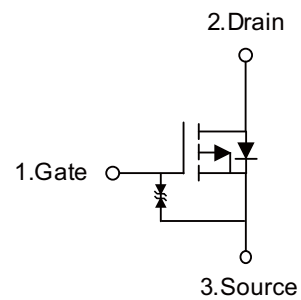
■ APPLICATIONS

- Load switch for portable
- DC/DC converter

■ FEATURES

- * High Density Cell Design For Ultra Low On-Resistance
- * Advanced trench process technology
- * ESD protected

Symbol



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	PMV50UPE	SOT-23	3000pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS ($T_C = 25^{\circ}C$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V _{DS}	-20	V
Gate-Source Voltage		V _{GS}	±8	V
Continuous Drain Current		I _D	-4	A
Pulsed Drain Current		I _{DM}	-16	A
Maximum Power Dissipation	TA = 25°C	P _D	1.25	W
	TA = 75°C		1	W
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance		R _{thJA}	100	°C/W

■ ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Test condition	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = -250\mu A$	-20	-	-	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -4.0A$	-	32	40	$m\Omega$
		$V_{GS} = -2.5V, I_D = -4.0A$	-	40	52	$m\Omega$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-	-1	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$	-	-	-1	μA
		$V_{DS} = -20V, T_J = 55^{\circ}C$	-	-	-5	μA
Gate Body Leakage	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$	-	-	± 10	μA
Forward Transconductance	g_{fs}	$V_{DS} = -5V, I_D = -4A$	6.5	-	-	S
Dynamic						
Total Gate Charge	Q_g	$V_{DS} = -10V, I_D \cong -4A$ $V_{GS} = -4.5V$	-	9.3	-	nC
Gate-Source Charge	Q_{gs}		-	1	-	nC
Gate-Drain Charge	Q_{gd}		-	2.2	-	nC
Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = -10V$ $V_{GS} = -4.5V, R_G = 3\Omega$	-	13	-	ns
Turn-On Rise Time	t_r		-	9	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	19	-	ns
Turn-Off Fall Time	t_f		-	29	-	ns
Input Capacitance	C_{iss}	$V_{DS} = -10V, V_{GS} = 0V$ $f = 1.0\text{ MHz}$	-	751	-	pF
Output Capacitance	C_{oss}		-	115	-	pF
Reverse Transfer Capacitance	C_{rss}		-	80	-	pF
Source-drain-diode						
Max. Diode Forward Current	I_S		-	-	-4	A
Diode Forward Voltage	V_{SD}	$I_S = -1.0A, V_{GS} = 0V$	-	-	-1.2	V

■ TYPICAL CHARACTERISTICS

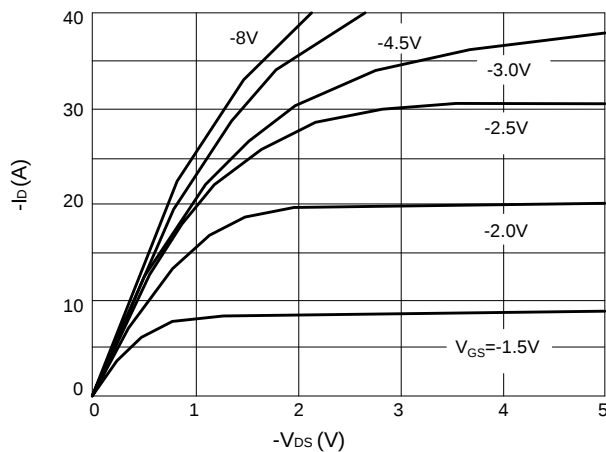


Figure 1: On-region characteristics

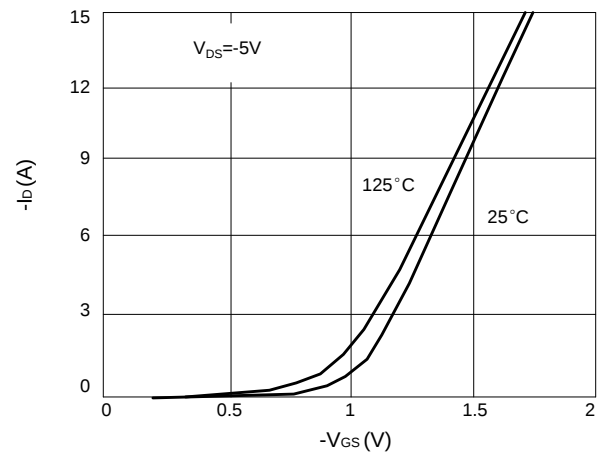


Figure 2: Transfer characteristics

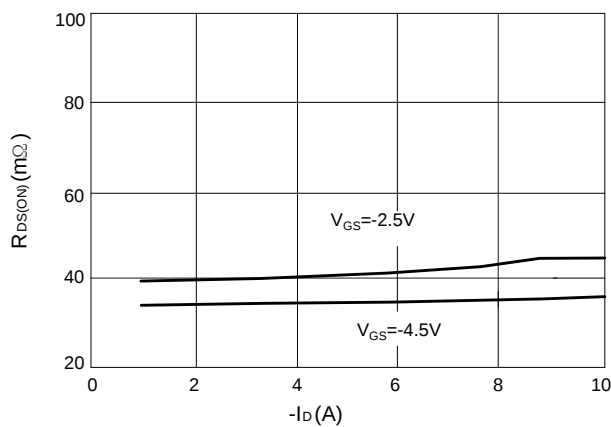


Figure 3: On-resistance vs. drain current gate voltage

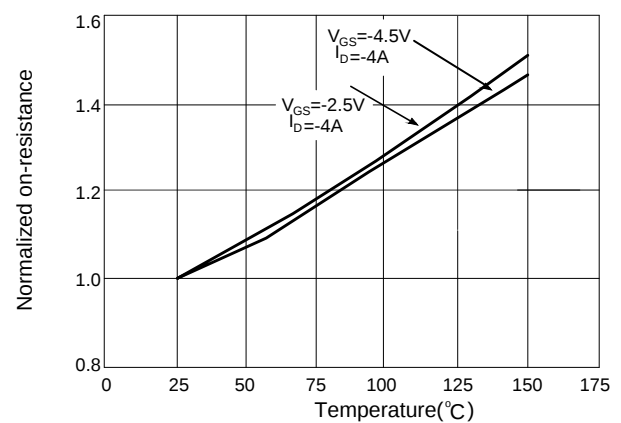


Figure 4: On-resistance vs. junction temperature

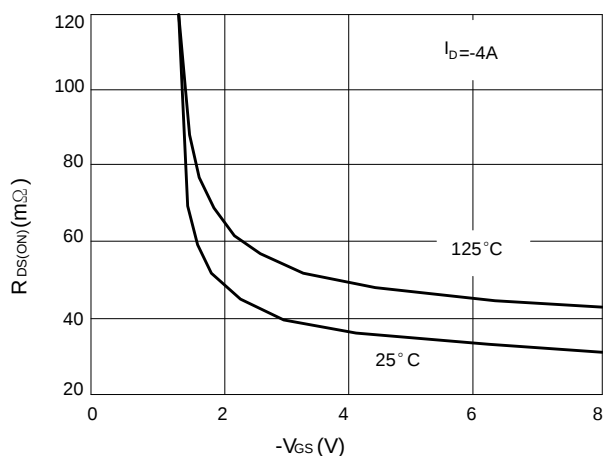


Figure 5: On-resistance vs. gate-source voltage

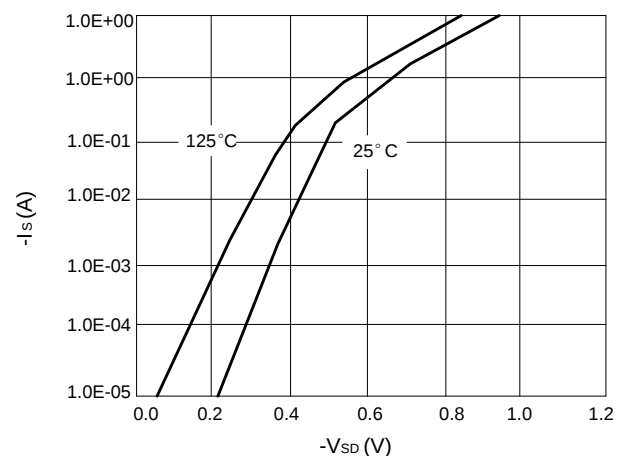


Figure 6: Body-diode characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

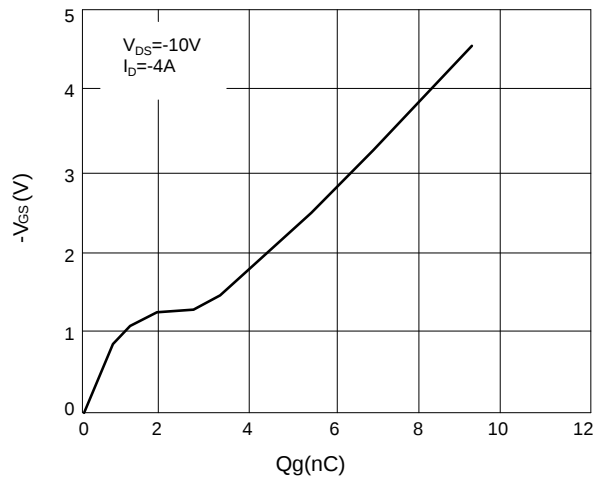


Figure 7: Gate-charge characteristics

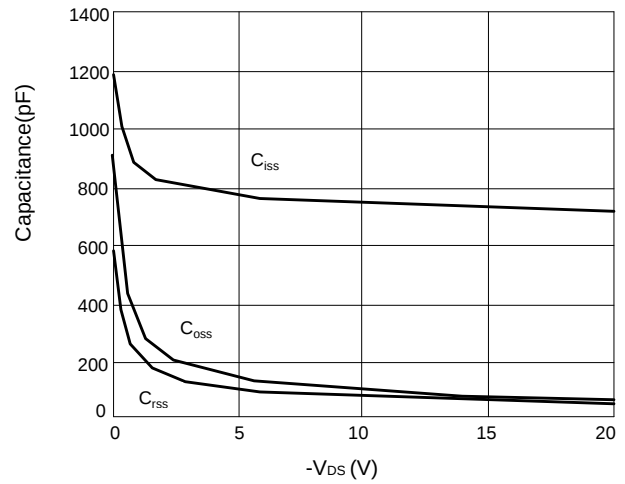


Figure 8: Capacitance characteristics

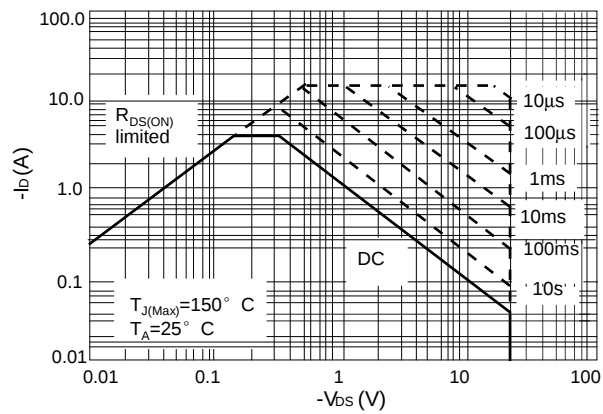
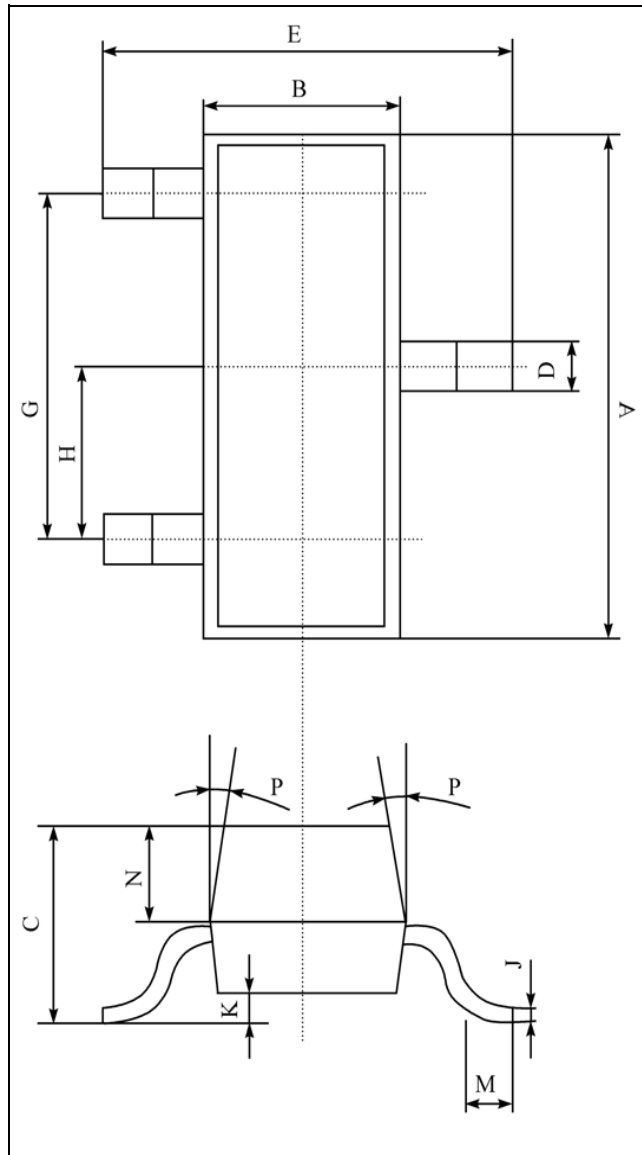


Figure 9: Safe operating area

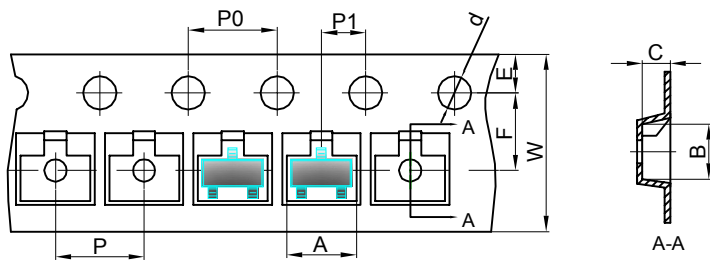
■ SOT-23 PACKAGE OUTLINE DIMENSIONS

单位 (UNIT) : mm



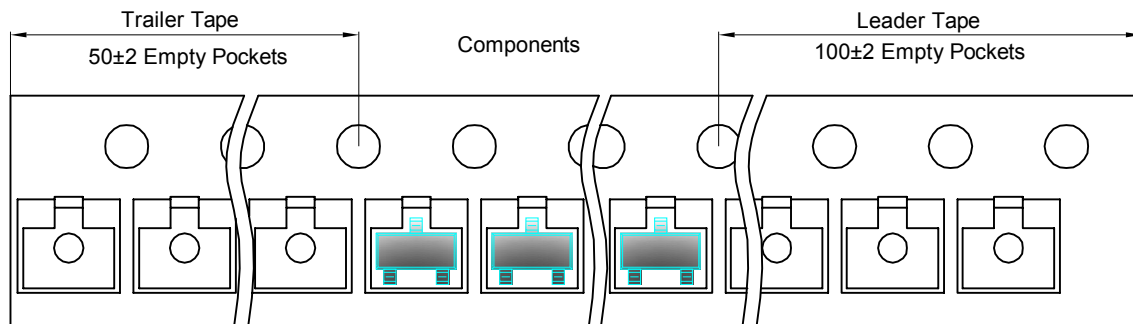
序号	数值及公差
A	2.90 ± 0.10
B	1.30 ± 0.10
C	1.00 ± 0.10
D	0.40 ± 0.10
E	2.40 ± 0.20
G	1.90 ± 0.10
H	0.95 ± 0.05
J	0.13 ± 0.05
K	$0.00 - 0.10$
M	≥ 0.20
N	0.60 ± 0.10
P	$7 \pm 2^\circ$
Packing SOT-23 包装规格 SMD片式表面贴封装 包装方式: 载带卷盘包装 Tape & Reel, 3Kpcs/Reel 每卷数量3000只 (3Kpcs/Reel) 每盒数量45000只 (45Kpcs/BOX) 每箱数量180000只 (180Kpcs/Cartons)	

SOT-23 Embossed Carrier Tape

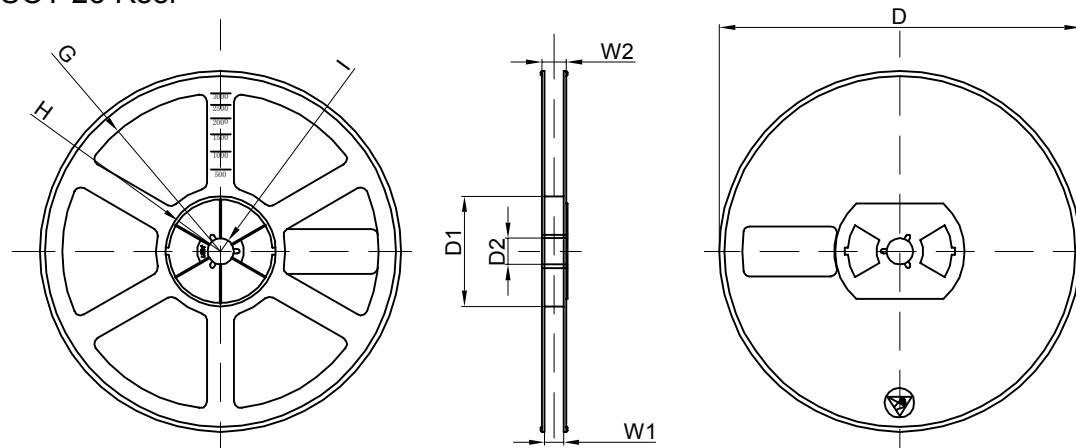


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 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	192×192×193	180,000 pcs	404×404×214	