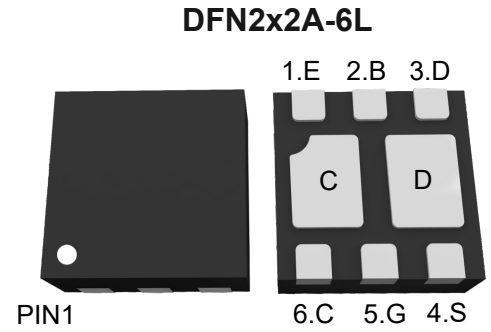


Features

- Small Surface Mount Package
- ESD Protected(HBM) up to 2KV
- N-Channel MOSFET
 $V_{DS} = 20V$, $I_D = 0.8A$
 $R_{DS(on)} < 300m\Omega @ V_{GS} = 4.5V$
- PNP Transistor
 $V_{CBO} = -40V$, $V_{CEO} = -25V$

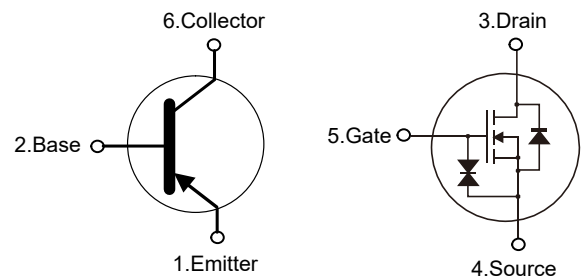


Marking Code: 720

Applications

- Li-Battery Charging
- Other power management in portable

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
N-MOS			
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	I_D	0.8	A
Drain Current-Pulsed ^{Note1}	I_{DM}	3.2	A
PNP Transistor			
Collector Base Voltage	$-V_{CBO}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	25	V
Emitter Base Voltage	$-V_{EBO}$	6	V
Collector Current	$-I_C$	1.5	A
Power Dissipation and Temperature			
Maximum Power Dissipation	P_D	0.35	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	357	°C/W
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N-MOS

Electrical Characteristics

(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$	--	--	± 10	μA
Gate Threshold Voltage ^{Note3}	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.35	0.75	1.1	V
Drain-Source On-Resistance ^{Note3}	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=0.6A$	--	180	300	m Ω
		$V_{GS}=2.5V, I_D=0.5A$	--	260	350	m Ω
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=5V, I_D=0.5A$	--	2	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0V, f=1MHz$	--	56	--	pF
Output Capacitance	C_{oss}		--	20	--	pF
Reverse Transfer Capacitance	C_{rss}		--	2.5	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=10V, I_D=0.5A$ $V_{GS}=4.5V, R_G=10\Omega$	--	2	--	nS
Turn-on Rise Time	t_r		--	18.8	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	10	--	nS
Turn-off Fall Time	t_f		--	23	--	nS
Total Gate Charge	Q_g	$V_{DS}=10V, I_D=0.5A, V_{GS}=4.5V$	--	1	--	nC
Gate-Source Charge	Q_{gs}		--	0.28	--	nC
Gate-Drain Charge	Q_{gd}		--	0.22	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	V_{SD}	$V_{GS}=0V, I_S=0.8A$	--	--	1.2	V
Diode Forward Current ^{Note2}	I_S		--	--	0.8	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board, $t \leq 10$ sec.

3. Pulse Test: Pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.



PNP Transistor

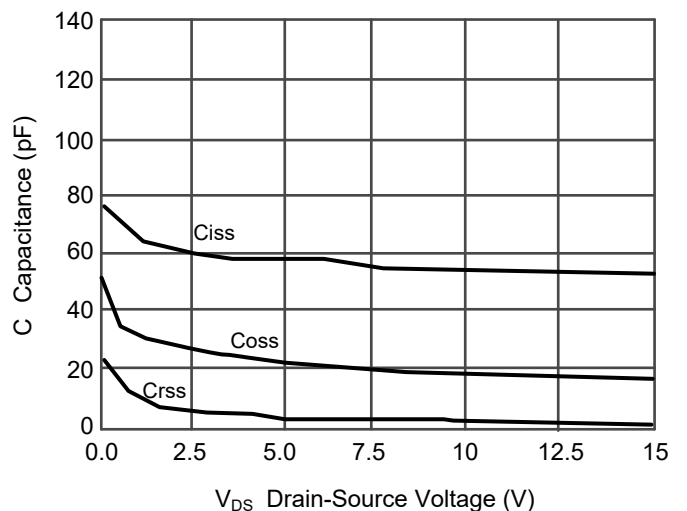
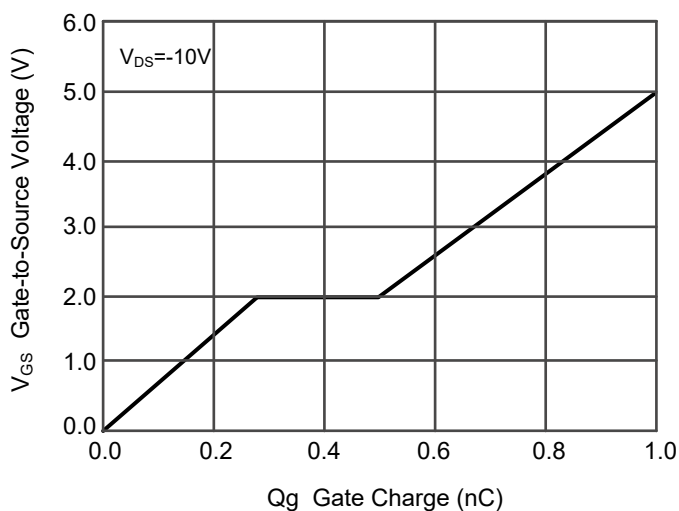
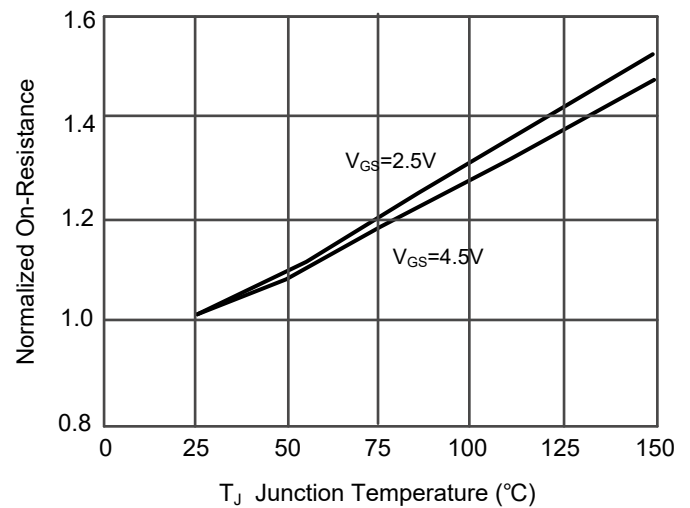
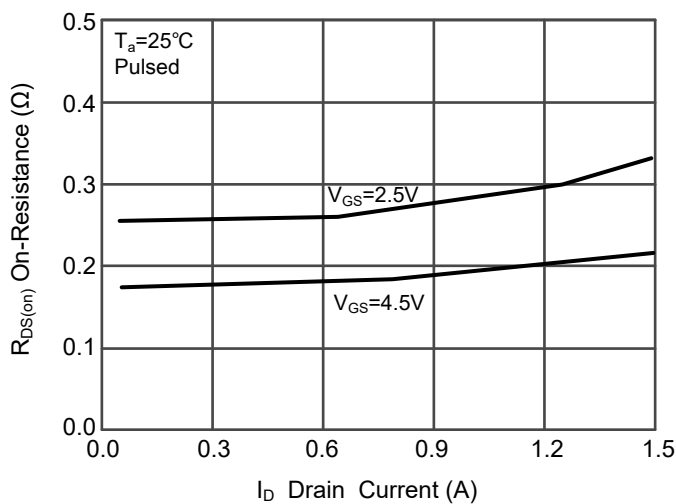
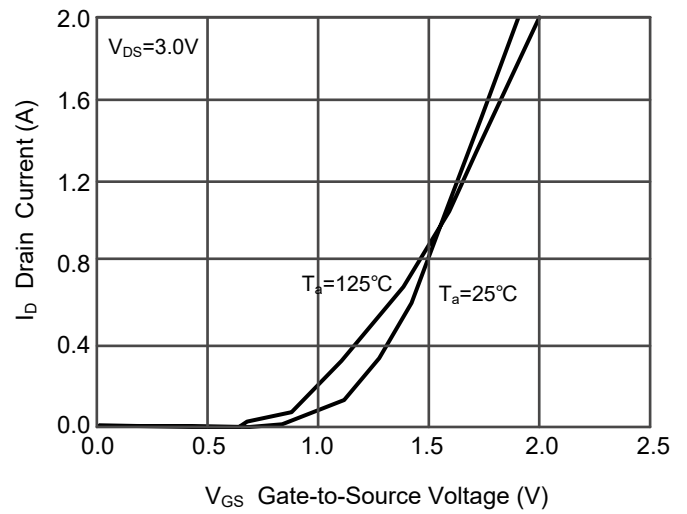
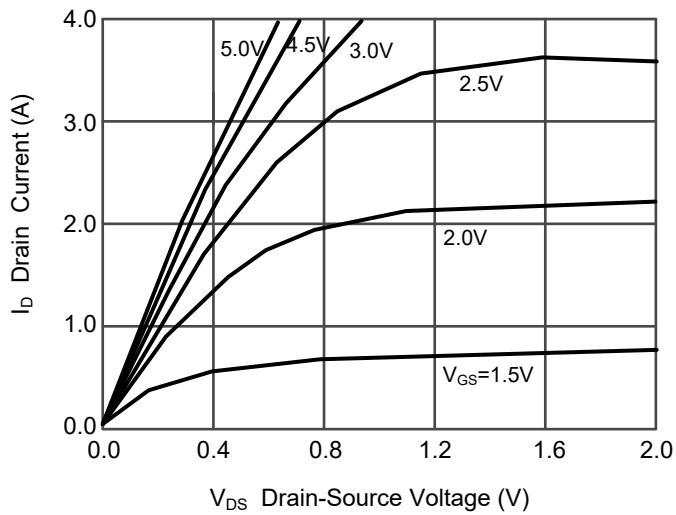
Electrical Characteristics

(Ta=25°C unless otherwise specified)

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = -2\text{ V}$, $I_C = -500\text{ mA}$	H_{FE}	100	360	--
Collector Base Cutoff Current at $V_{CB} = -35\text{ V}$	$-I_{CBO}$	--	100	nA
Base Base Cutoff Current at $V_{EB} = -6\text{ V}$	$-I_{EBO}$	--	100	nA
Collector Base Breakdown Voltage at $I_C = -100\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	40	--	V
Collector Emitter Breakdown Voltage at $I_C = -2\text{ mA}$	$-V_{(BR)CEO}$	25	--	V
Emitter Base Breakdown Voltage at $I_E = -100\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	6	--	V
Collector Emitter Saturation Voltage at $I_C = -800\text{ mA}$, $I_B = -80\text{ mA}$	$-V_{CE(sat)}$	--	0.5	V
Base Emitter Saturation Voltage at $I_C = -800\text{ mA}$, $I_B = -80\text{ mA}$	$-V_{BE(sat)}$	--	1.2	V
Base Emitter On Voltage at $V_{CE} = -1\text{ V}$, $I_C = -10\text{ mA}$	$-V_{BE(on)}$	--	1	V
Transition Frequency at $V_{CE} = -10\text{ V}$, $I_C = -50\text{ mA}$	F_T	120	--	MHz



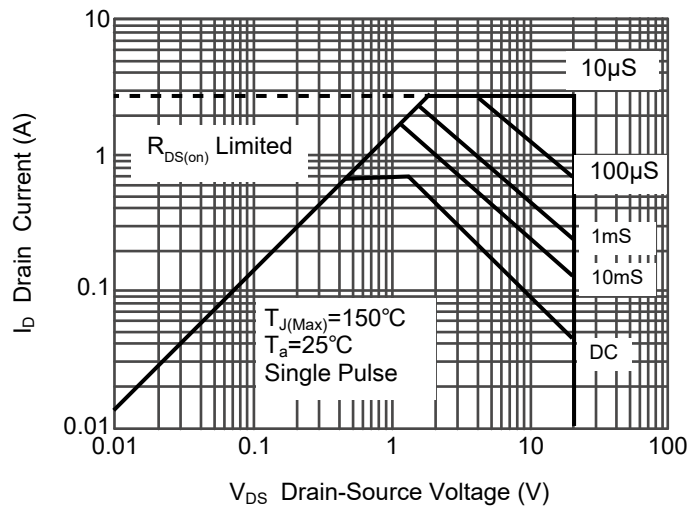
N-MOS Typical Characteristic Curves





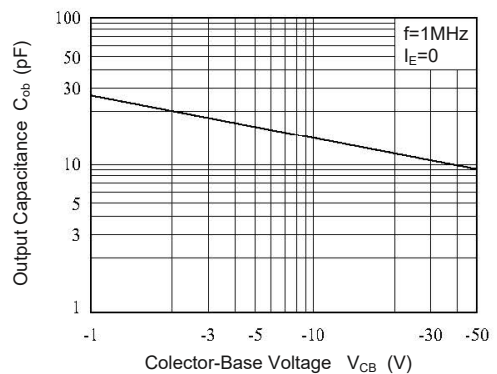
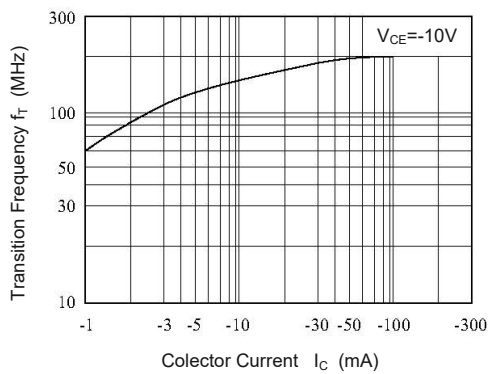
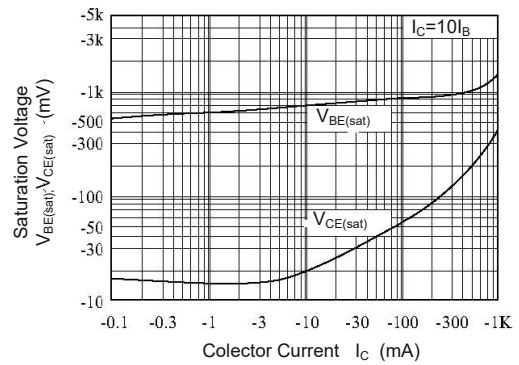
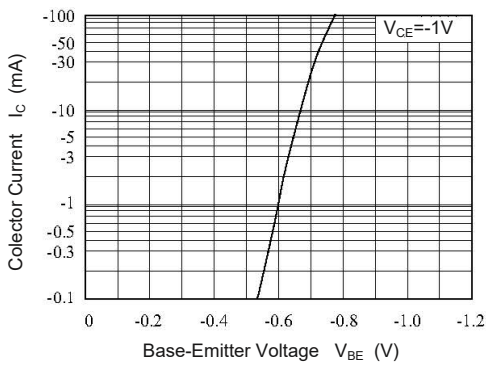
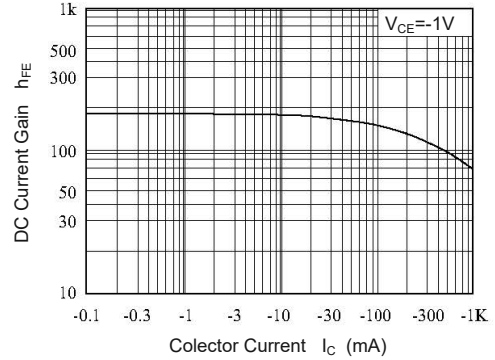
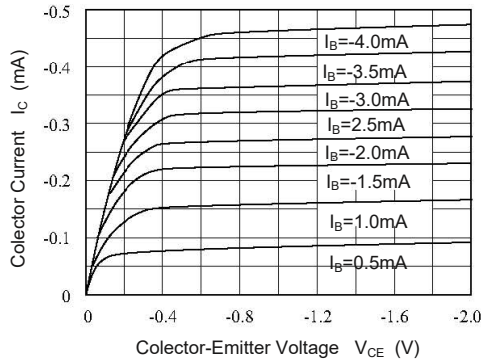
PJMT23DFA

N-Channel Enhancement Mode MOSFET with PNP Transistor





PNP Transistor Typical Characteristic Curves





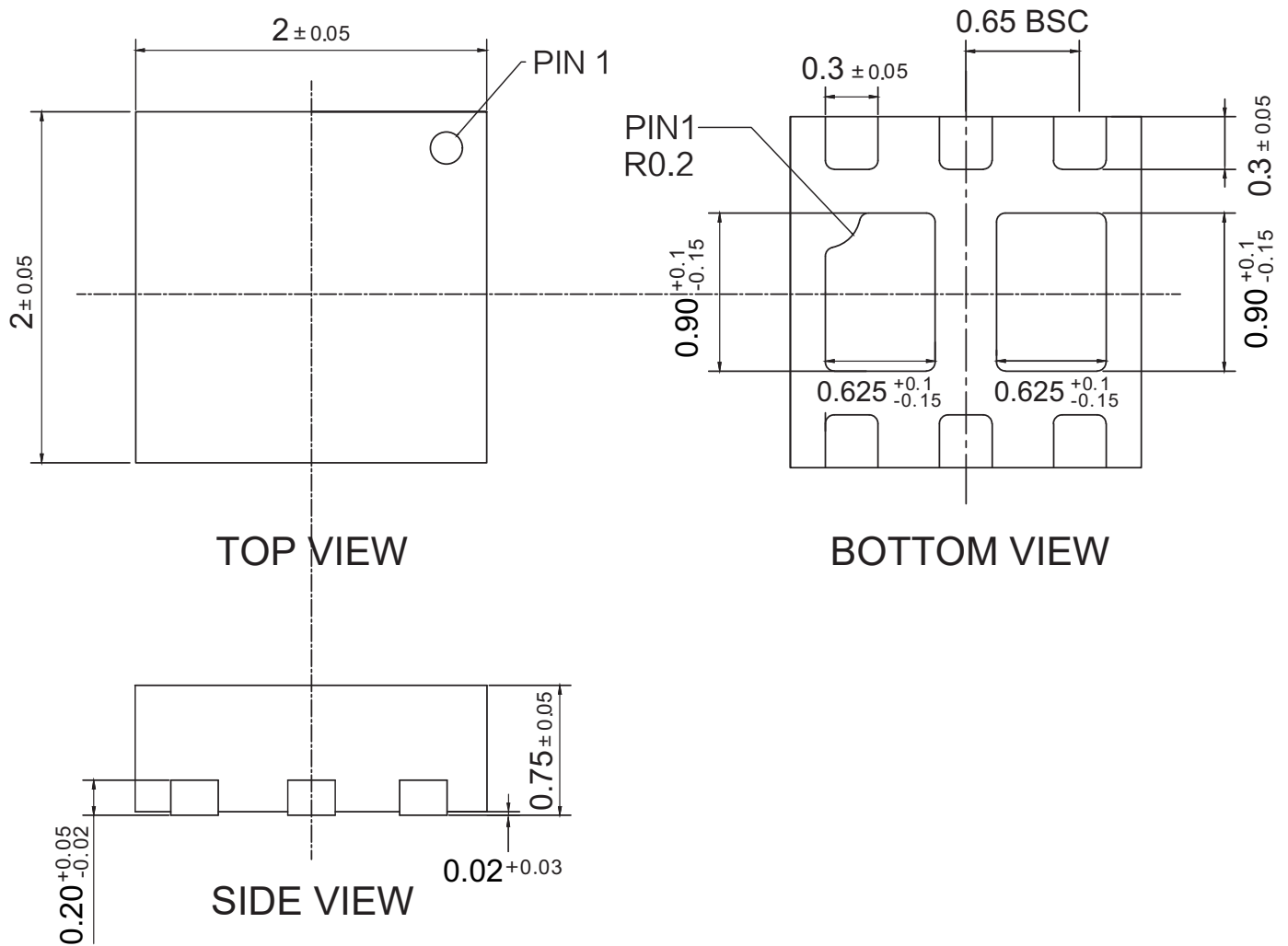
PJMT23DFA

N-Channel Enhancement Mode MOSFET with PNP Transistor

Package Outline

DFN2x2-6L-0002

Dimensions in mm



Ordering Information

Device	Package	Shipping
PJMT23DFA	DFN2x2A-6L	3,000PCS/Reel&7inches

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