

## N-Channel 30V (D-S) MOSFET with PNP Transistor

$V_{(BR)DSS}/V_{CEO}$	$R_{DS(on)MAX}$	$I_D/I_C$
30V	0.35Ω@-4.5V	0.6A
	0.55Ω@-2.5V	
-30V	/	-1.5A

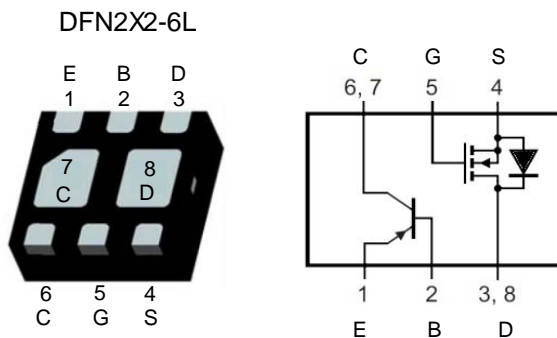
### Features

- Small package DFN2x2-6L
- High DC current gain
- RoHS and Halogen-Free Compliant

### Applications

- Charging Switch for Portable Devices
- Power management

### Pin Configuration



### Packing Information

Device	Marking	Reel Size	Tape Width	Quantity
EC4302	11M .XXX	7"	8mm	3000pcs

### Absolute Maximum Ratings (T<sub>J</sub>=25 °C Unless Otherwise Noted)

Symbol	Parameter	Value	Unit
<b>PNP Transistor</b>			
$V_{CBO}$	Collector-Base Voltage	-30	V
$V_{CEO}$	Collector-Emitter Voltage	-30	V
$V_{EBO}$	Emitter-Base Voltage	-6	V
$I_C$	Collector Current	-1.5	A
<b>N-MOSFET</b>			
$V_{DS}$	Drain-Source Voltage	30	V
$V_{GS}$	Gate-Source Voltage	±10	V
$I_D$	Drain Current -Continuous	0.6	A
$I_{DM}$	Drain Current - Pulse	1.4	A
<b>Power Dissipation, Temperature and Thermal Resistance</b>			
$P_D$	Power Dissipation	0.9	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient (note1)	110	°C/W
	Thermal Resistance from Junction to Ambient (note2)	210	°C/W
$T_j$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55~+150	°C
$T_L$	Lead Temperature	260	°C

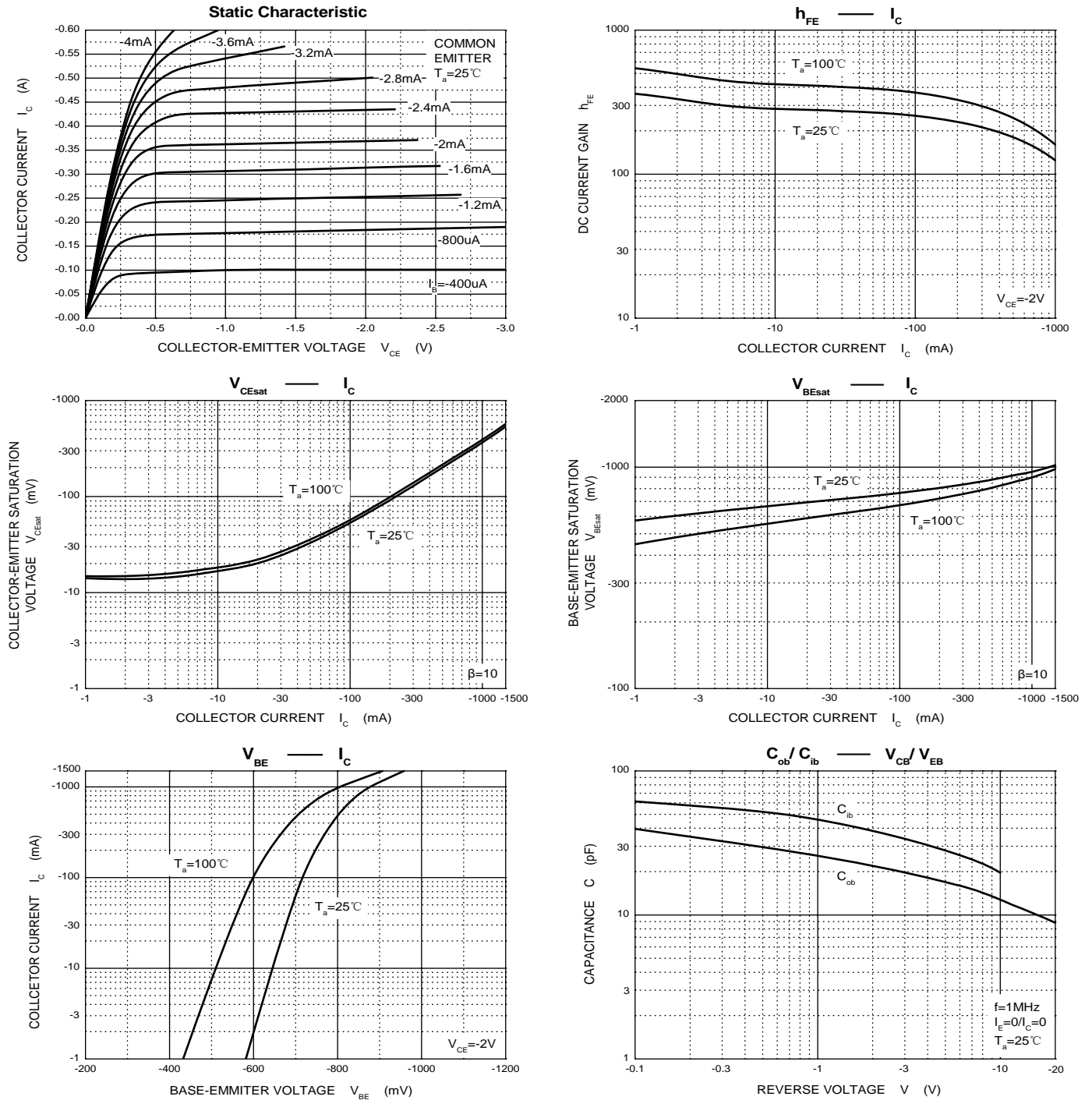
**PNP TRANSISTOR ELECTRICAL CHARACTERISTICS ( $T_J=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-0.1\text{mA}$ , $I_E=0$	-30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-10\text{mA}$ , $I_B=0$	-30			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-0.1\text{mA}$ , $I_C=0$	-6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=-20\text{V}$ , $I_E=0$			-0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=-6\text{V}$ , $I_C=0$			-0.1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE}=-2\text{V}$ , $I_C=-0.5\text{A}$	100		300	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-0.5\text{A}$ , $I_B=-5\text{mA}$			-0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-0.5\text{A}$ , $I_B=-50\text{mA}$			-1.4	V
Base-emitter voltage	$V_{BE(on)}$	$V_{CE}=-2\text{V}$ , $I_C=-0.5\text{A}$			-1.1	V

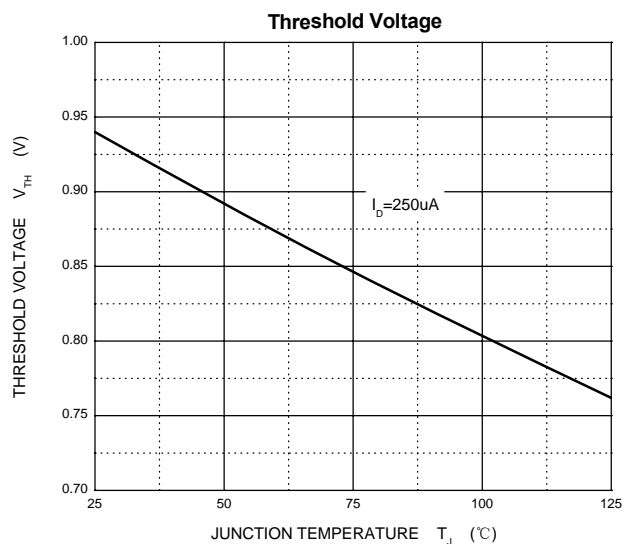
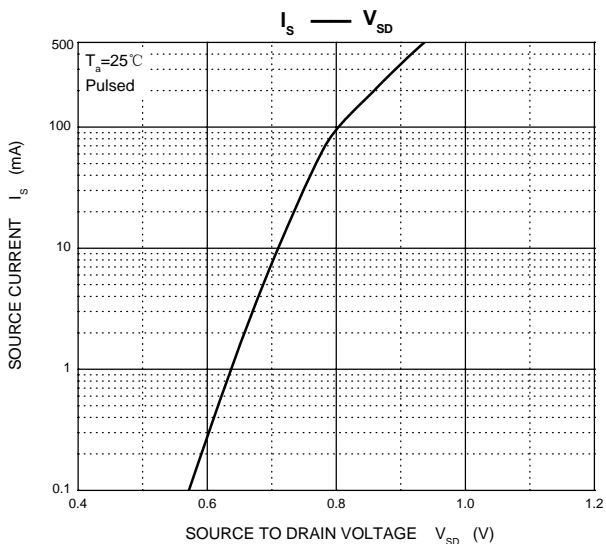
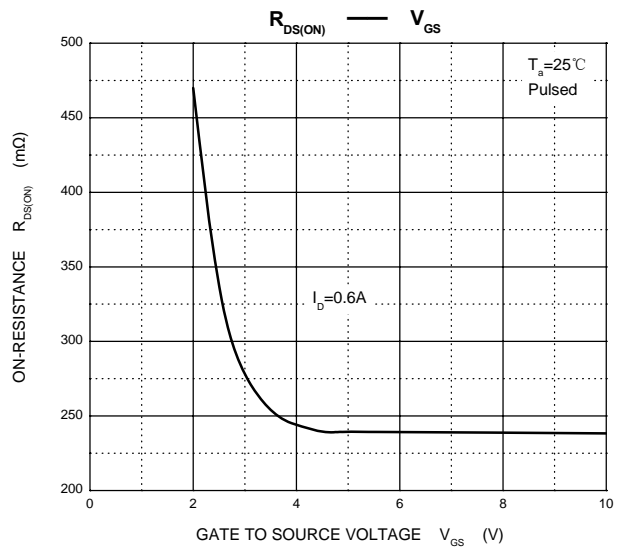
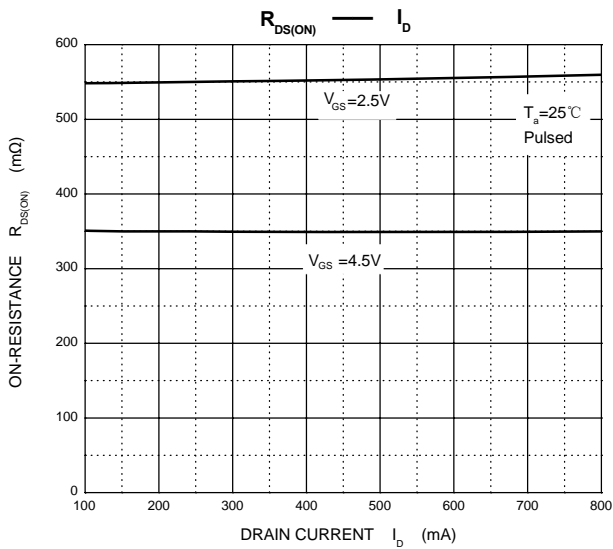
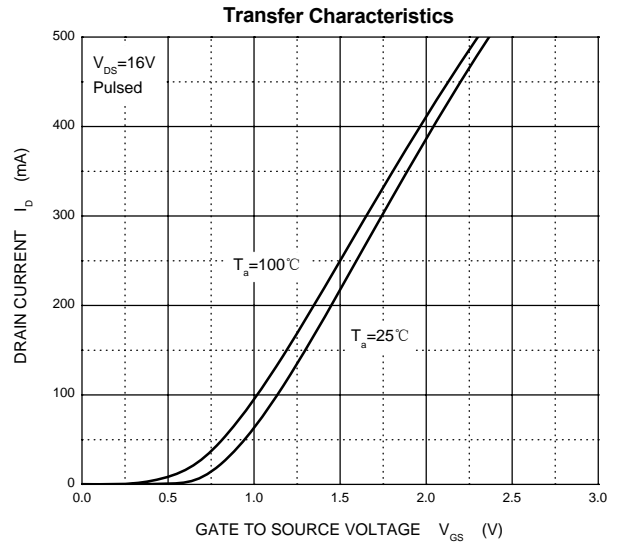
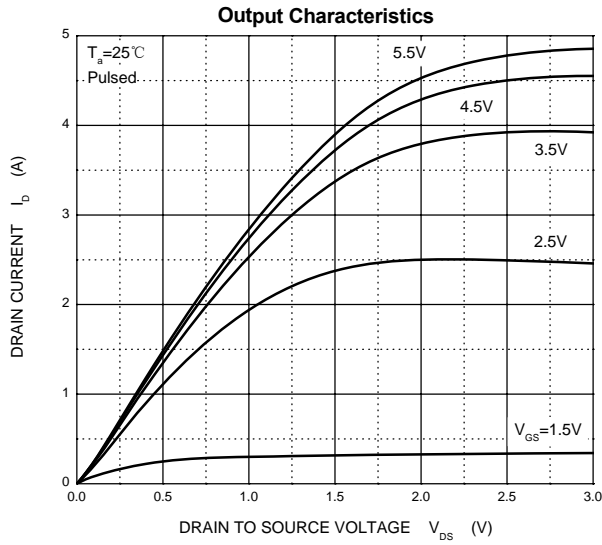
**N-ch MOSFET ELECTRICAL CHARACTERISTICS ( $T_J=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0\text{V}$ , $I_D=250\mu\text{A}$	30			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS}=16\text{V}$ , $V_{GS}=0\text{V}$			0.1	$\mu\text{A}$
Gate-body leakage current	$I_{GSS}$	$V_{GS}=\pm 4.5\text{V}$ , $V_{DS}=0\text{V}$			$\pm 1$	$\mu\text{A}$
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ , $I_D=250\mu\text{A}$	0.55	0.75	1.0	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS}=4.5\text{V}$ , $I_D=0.5\text{A}$			0.35	$\Omega$
		$V_{GS}=2.5\text{V}$ , $I_D=0.5\text{A}$			0.55	$\Omega$
Diode forward voltage	$V_{SD}$	$I_S=0.5\text{A}$ , $V_{GS}=0\text{V}$		0.7	1.3	V

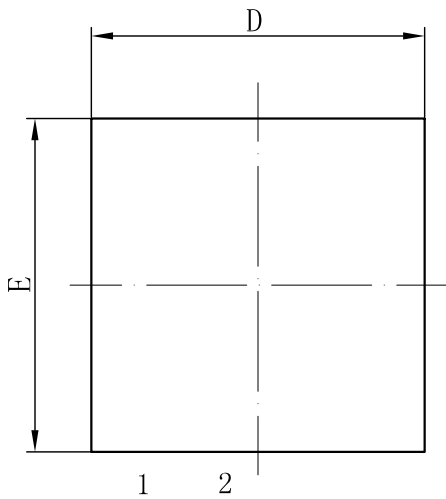
**PNP TRANSISTOR TYPICAL CHARACTERISTICS**



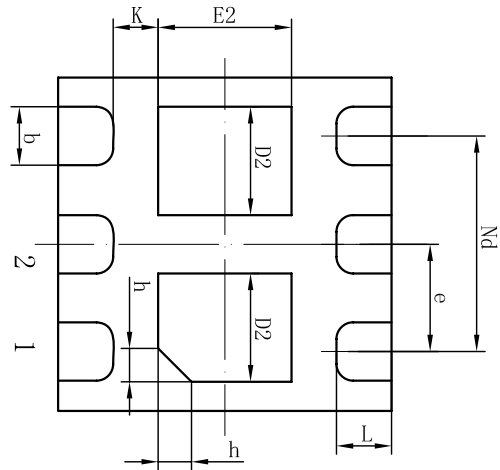
MOSFET TYPICAL CHARACTERISTICS(25°C, unless otherwise noted)



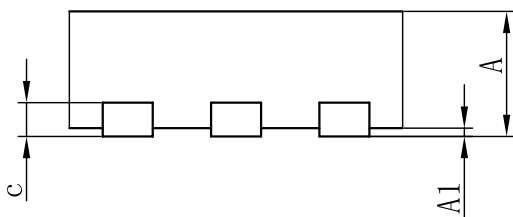
### DFN2X2-6L Package Information



Top View



Bottom View



Side View

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	0	0.02	0.05
b	0.30	0.35	0.40
c	0.18	0.20	0.25
D	1.95	2.00	2.05
D2	0.60	0.65	0.70
e	0.65BSC		
Nd	1.30BSC		
E	1.95	2.00	2.05
E2	0.75	0.80	0.85
K	0.20	-	-
L	0.28	0.33	0.38
h	0.15	0.20	0.25