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XH018 Primitive Device Release Status

Version 8.0.1
June 2019

Total Page Number: [22]

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1 Table of Contents

2   Introduction

The table in section 3 gives the qualification status for primitive devices in XH018 at the time of release of the XH018 Process Specifications v8.0.1. Primitive device status can change over time because qualification of devices is going on continuously.

Qualification status are:
- Under development
- CR (Conditional release)
- VR (Validated Release)
- FR (Final Release)

The different qualification status definition are described in the Process Qualification stages Document on "my X-FAB" using the Filters:
 Prototyping -> Manual -> Prototyping Steps:General
  ➔ Process Qualification stages

3   Primitive Device Table and Qualification Status

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
ne	MOS transistor	N-type FET	1.8V low power NMOS	FR
pe	MOS transistor	P-type FET	1.8V low power PMOS 4 terminals	FR
pe_5	MOS transistor	P-type FET	1.8V low power PMOS 5 terminals	FR
nel	MOS transistor	N-type FET	1.8V low VT NMOS	FR
pel	MOS transistor	P-type FET	1.8V low VT PMOS 4 terminals	FR
pel_5	MOS transistor	P-type FET	1.8V low VT PMOS 5 terminals	FR
nei	MOS transistor	Isolated, N-type FET	isolated 1.8V low power NMOS 4 terminals	FR
nei_6	MOS transistor	Isolated, N-type FET	isolated 1.8V low power NMOS in DNWELL 6 terminals	FR
nei_m_6	MOS transistor	Isolated, N-type FET	isolated 1.8V low power NMOS in DNWELLMV 6 terminals	FR
pei	MOS transistor	Isolated, P-type FET	isolated 1.8V low power PMOS 4 terminals	FR
pei_5	MOS transistor	Isolated, P-type FET	isolated 1.8V low power PMOS in DNWELL 5 terminals	FR
pei_m_5	MOS transistor	Isolated, P-type FET	isolated 1.8V low power PMOS in DNWELLMV 5 terminals	FR

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Primitive Device Table and Release Status

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
neli	MOS transistor	Isolated, N-type FET	isolated 1.8V low VT NMOS 4 terminals	FR
neli_6	MOS transistor	Isolated, N-type FET	isolated 1.8V low VT NMOS in DNWELL 6 terminals	FR
neli_m_6	MOS transistor	Isolated, N-type FET	isolated 1.8V low VT NMOS in DNWELLMV 6 terminals	FR
peli	MOS transistor	Isolated, P-type FET	isolated 1.8V low VT PMOS 4 terminals	FR
peli_5	MOS transistor	Isolated, P-type FET	isolated 1.8V low VT PMOS in DNWELL 5 terminals	FR
peli_m_5	MOS transistor	Isolated, P-type FET	isolated 1.8V low VT PMOS in DNWELLMV 5 terminals	FR
nesvt	MOS transistor	N-type FET	1.8V medium Vt NMOS	VR
nesvti	MOS transistor	Isolated, N-type FET	isolated 1.8V medium Vt NMOS 4 terminals	VR
nesvti_6	MOS transistor	Isolated, N-type FET	isolated 1.8V medium Vt NMOS in DNWELL 6 terminals	VR
nesvti_m_6	MOS transistor	Isolated, N-type FET	isolated 1.8V medium Vt NMOS in DNWELLMV 6 terminals	VR
pesvt	MOS transistor	P-type FET	1.8V medium Vt PMOS 4 terminals	VR
pesvt_5	MOS transistor	P-type FET	1.8V medium Vt PMOS 5 terminals	VR
pesvti	MOS transistor	Isolated, P-type FET	isolated 1.8V medium Vt PMOS 4 terminals	VR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
pesvti_5	MOS transistor	Isolated, P-type FET	isolated 1.8V medium Vt PMOS in DNWELL 5 terminals	VR
pesvti_m_5	MOS transistor	Isolated, P-type FET	isolated 1.8V medium Vt PMOS in DNWELLMV 5 terminals	VR
nelna	MOS transistor	N-type FET	1.8V low noise NMOS	VR
nelnai	MOS transistor	Isolated, N-type FET	isolated 1.8V low noise NMOS 4 terminals	VR
nelnai_m_6	MOS transistor	Isolated, N-type FET	isolated 1.8V low noise NMOS in DNWELLMV 6 terminals	VR
nelnai_6	MOS transistor	Isolated, N-type FET	isolated 1.8V low noise NMOS in DNWELL 6 terminals	VR
nn3	MOS transistor	Native MOS	3.3V native Vt NMOS	FR
ne3	MOS transistor	N-type FET	3.3V low power NMOS	FR
pe3	MOS transistor	P-type FET	3.3V low power PMOS 4 terminals	FR
pe3_5	MOS transistor	P-type FET	3.3V low power PMOS 5 terminals	FR
ne3i	MOS transistor	Isolated, N-type FET	isolated 3.3V low power NMOS 4 terminals	FR
ne3i_6	MOS transistor	Isolated, N-type FET	isolated 3.3V low power NMOS in DNWELL 6 terminals	FR
ne3i_m_6	MOS transistor	Isolated, N-type FET	isolated 3.3V low power NMOS in DNWELLMV 6 terminals	FR

Primitive Device Table and Release Status

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
pe3i	MOS transistor	Isolated, P-type FET	isolated 3.3V low power PMOS 4 terminals	FR
pe3i_5	MOS transistor	Isolated, P-type FET	isolated 3.3V low power PMOS in DNWELL 5 terminals	FR
pe3i_m_5	MOS transistor	Isolated, P-type FET	isolated 3.3V low power PMOS in DNWELLMV 5 terminals	FR
ne3lna	MOS transistor	N-type FET	3.3V low noise NMOS	VR
ne3lnai	MOS transistor	Isolated, N-type FET	isolated 3.3V low noise NMOS 4 terminals	VR
ne3lnai_6	MOS transistor	Isolated, N-type FET	isolated 3.3V low noise NMOS in DNWELL 6 terminals	VR
ne3lnai_m_6	MOS transistor	Isolated, N-type FET	isolated 3.3V low noise NMOS in DNWELLMV 6 terminals	VR
pe3ln	MOS transistor	P-type FET	3.3V low noise PMOS 4 terminals	VR
pe3ln_5	MOS transistor	P-type FET	3.3V low noise PMOS 5 terminals	VR
pe3lni	MOS transistor	Isolated, P-type FET	isolated 3.3V low noise PMOS 4 terminals	VR
pe3lni_5	MOS transistor	Isolated, P-type FET	isolated 3.3V low noise PMOS in DNWELL 5 terminals	VR
pe3lni_m_5	MOS transistor	Isolated, P-type FET	isolated 3.3V low noise PMOS in DNWELLMV 5 terminals	VR
pe3lna	MOS transistor	P-type FET	3.3V low noise PMOS 4 terminals	VR

Primitive Device Table and Release Status

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
pe3lna_5	MOS transistor	P-type FET	3.3V low noise PMOS 5 terminals	VR
pe3lnai	MOS transistor	Isolated, P-type FET	isolated 3.3V low noise PMOS 4 terminals	VR
pe3lnai_5	MOS transistor	Isolated, P-type FET	isolated 3.3V low noise PMOS in DNWELL 5 terminals	VR
pe3lnai_m_5	MOS transistor	Isolated, P-type FET	isolated 3.3V low noise PMOS in DNWELLMV 5 terminals	VR
nd3	MOS transistor	Depletion FET	3.3V depletion NMOS	FR
nd3i	MOS transistor	Depletion FET, Isolated	isolated 3.3V depletion NMOS 4 terminals	FR
nd3i_6	MOS transistor	Depletion FET, Isolated	isolated 3.3V depletion NMOS in DNWELL 6 terminals	FR
nd3i_m_6	MOS transistor	Depletion FET, Isolated	isolated 3.3V depletion NMOS in DNWELLMV 6 terminals	FR
nmma	MOS transistor	N-type FET	10V HV NMOS	FR
nmma_bjt	MOS transistor	N-type FET	nmma with additional parasitic bjt model	FR
pmma	MOS transistor	P-type FET	15V HV PMOS	FR
pmma_bjt	MOS transistor	P-type FET	pmma with additional parasitic bjt model	FR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
nedi	MOS transistor	Isolated, DMOS, Superseded	isolated 40V lateral n-DMOS	FR
nedi_bjt	MOS transistor	Isolated, DMOS, Superseded	nedi with additional parasitic bjt model	FR
nedia	MOS transistor	Isolated, DMOS	isolated 45V lateral n-DMOS	FR
nedia_bjt	MOS transistor	Isolated, DMOS	nedia with additional parasitic bjt model	FR
ped2	MOS transistor	DMOS	35V lateral p-DMOS	FR
ped2_bjt	MOS transistor	DMOS	ped2 with additional parasitic bjt model	FR
ped	MOS transistor	DMOS	45V lateral p-DMOS	FR
ped_bjt	MOS transistor	DMOS	ped with additional parasitic bjt model	FR
nhv	MOS transistor	N-type FET	45V asymmetrical HV NMOS	FR
nhv_bjt	MOS transistor	N-type FET	nhv with additional parasitic bjt model	FR
nhhv	MOS transistor	N-type FET	45V symmetrical HV NMOS	FR
nhhv_bjt	MOS transistor	N-type FET	nhhv with additional parasitic bjt model	FR
nmc	MOS transistor	N-type FET	10V asymmetrical HV NMOS	FR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
nmc_bjt	MOS transistor	N-type FET	nmc with additional parasitic bjt model	FR
nmmc	MOS transistor	N-type FET	15V symmetrical HV NMOS	FR
nmmc_bjt	MOS transistor	N-type FET	nmmc with additional parasitic bjt model	FR
nmmd	MOS transistor	N-type FET	15V symmetrical HV NMOS	FR
nmmd_bjt	MOS transistor	N-type FET	nmmd with additional parasitic bjt model	FR
nma	MOS transistor	N-type FET	6V NMOS with thick gate oxide	FR
nma_bjt	MOS transistor	N-type FET	nma with additional parasitic bjt model	FR
nhvd	MOS transistor	Depletion FET	32V asymmetrical HV depletion NMOS	FR
nhvd_bjt	MOS transistor	Depletion FET	nhvd with additional parasitic bjt model	FR
nhhvd	MOS transistor	Depletion FET	32V symmetrical HV depletion NMOS	FR
nhhvd_bjt	MOS transistor	Depletion FET	nhhvd with additional parasitic bjt model	FR
phv	MOS transistor	P-type FET	45V asymmetrical HV PMOS	FR
phv_bjt	MOS transistor	P-type FET	phv with additional parasitic bjt model	FR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
phhv	MOS transistor	P-type FET	45V symmetrical HV PMOS	FR
phhv_bjt	MOS transistor	P-type FET	phhv with additional parasitic bjt model	FR
pmc	MOS transistor	P-type FET	20V asymmetrical HV PMOS	FR
pmc_bjt	MOS transistor	P-type FET	pmc with additional parasitic bjt model	FR
pmmc	MOS transistor	P-type FET	20V symmetrical HV PMOS	FR
pmmc_bjt	MOS transistor	P-type FET	pmmc with additional parasitic bjt model	FR
pma	MOS transistor	P-type FET	6V PMOS with thick gate oxide	FR
pma_bjt	MOS transistor	P-type FET	pma with additional parasitic bjt model	FR
qpva	Bipolar transistor	PNP bipolar, Vertical bipolar	1.8V vertical PNP bipolar transistor; emitter area = 2µm x 2µm	FR
qpvb	Bipolar transistor	PNP bipolar, Vertical bipolar	1.8V vertical PNP bipolar transistor; emitter area = 5µm x 5µm	FR
qpvc	Bipolar transistor	PNP bipolar, Vertical bipolar	1.8V vertical PNP bipolar transistor; emitter area = 10µm x 10µm	FR
qpva3	Bipolar transistor	PNP bipolar, Vertical bipolar	3.3V vertical PNP bipolar transistor; emitter area = 2µm x 2µm	FR
qpvb3	Bipolar transistor	PNP bipolar, Vertical bipolar	3.3V vertical PNP bipolar transistor; emitter area = 5µm x 5µm	FR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
qpvc3	Bipolar transistor	PNP bipolar, Vertical bipolar	3.3V vertical PNP bipolar transistor; emitter area = 10μm x10μm	FR
qnva	Bipolar transistor	NPN bipolar, Vertical bipolar	vertical NPN bipolar transistor	FR
qnvb	Bipolar transistor	NPN bipolar, Vertical bipolar	vertical NPN bipolar transistor	FR
qnvc	Bipolar transistor	NPN bipolar, Vertical bipolar	vertical NPN bipolar transistor	FR
rdn	Resistor	Diffusion resistor, N-type resistor	1.8V NDIFF / PWELL1 resistor (non salicided)	FR
rdp	Resistor	Diffusion resistor, P-type resistor	1.8V PDIFF / NWELL1 resistor (non salicided)	FR
rnw	Resistor	Well resistor	1.8V NWELL1 / PSUB resistor (STI terminated)	FR
rdn3	Resistor	Diffusion resistor, N-type resistor	3.3V NDIFF / PWELL2 resistor (non salicided)	FR
rdp3	Resistor	Diffusion resistor, P-type resistor	3.3V PDIFF / NWELL2 resistor (non salicided)	FR
rnw3	Resistor	Well resistor	3.3V NWELL2 / PSUB resistor (STI terminated)	FR
rdnwmv	Resistor	Well resistor	5V DNWELLMV / PSUB resistor (STI terminated)	FR
rnp1	Resistor	N-type resistor, Polysilicon resistor	N-doped POLY1 resistor (non salicided), 2 terminals	FR
rnp1_3	Resistor	N-type resistor, Polysilicon resistor	N-doped POLY1 resistor (non-salicided), 3 terminals	FR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
rpp1	Resistor	Polysilicon resistor, P-type resistor	P-doped POLY1 resistor (non-salicided), 2 terminals	FR
rpp1_3	Resistor	Polysilicon resistor, P-type resistor	P-doped POLY1 resistor (non-salicided), 3 terminals	FR
rpp1s	Resistor	Polysilicon resistor, P-type resistor, Silicided resistor	salicided P-doped POLY1 resistor, 2 terminals	FR
rpp1s_3	Resistor	Polysilicon resistor, P-type resistor, Silicided resistor	salicided P-doped POLY1 resistor, 3 terminals	FR
rnp1h	Resistor	High-ohmic resistor, N-type resistor, Polysilicon resistor	high-ohmic N-doped POLY1 resistor (non salicided), 2 terminals	FR
rnp1h_3	Resistor	High-ohmic resistor, N-type resistor, Polysilicon resistor	high-ohmic N-doped POLY1 resistor (non salicided), 3 terminals	FR
rpp1k1	Resistor	Polysilicon resistor, P-type resistor	lightly P-doped POLY1 resistor (non salicided), 2 terminals	FR
rpp1k1_3	Resistor	Polysilicon resistor, P-type resistor	lightly P-doped POLY1 resistor (non salicided), 3 terminals	FR
rm1	Resistor	Metal resistor	metal 1 resistor	FR
rm2	Resistor	Metal resistor	metal 2 resistor	FR
rm3	Resistor	Metal resistor	metal 3 resistor	FR
rm4	Resistor	Metal resistor	metal 4 resistor	FR
rm5	Resistor	Metal resistor	metal 5 resistor	FR

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Primitive Device Table and Release Status

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
rmtp	Resistor	Metal resistor	top metal resistor	FR
rmtpl	Resistor	Metal resistor	thick metal resistor	FR
mosvc	Capacitor	Varactor	1.8V N-type varactor	FR
mosvc3	Capacitor	Varactor	3.3V N-type varactor	FR
mosvc3i	Capacitor	Varactor	3.3V P-type varactor in DNWELL	FR
mosvc3i_m	Capacitor	Varactor	3.3V P-type varactor in DNWELLMV	FR
mosvci	Capacitor	Varactor	1.8V P-type varactor in DNWELL	FR
mosvci_m	Capacitor	Varactor	1.8V P-type varactor in DNWELLMV	FR
cpod	Capacitor	MOS capacitor	1.8V POD capacitor	VR
cpodhv	Capacitor	MOS capacitor	POD capacitor (high voltage)	VR
csandwt3	Capacitor	Sandwich capacitor	POLY1 / metal1/ metal2/ metal3 capacitor	FR
csandwt4	Capacitor	Sandwich capacitor	POLY1 / metal1/ metal2/ metal3/ metal4 capacitor	FR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
csandwt5	Capacitor	Sandwich capacitor	POLY1 / metal1/ metal2/ metal3/ metal4/ metal5 capacitor	FR
csf2p	Capacitor	Fringe capacitor	POLY1/metal1/metal2 fringe capacitor	FR
csf3p	Capacitor	Fringe capacitor	POLY1/metal1/metal2/metal3 fringe capacitor	FR
csf3	Capacitor	Fringe capacitor	10V metal1/metal2/metal3 fringe capacitor	FR
csf3a	Capacitor	Fringe capacitor	45V metal1/metal2/metal3 fringe capacitor	FR
csf4	Capacitor	Fringe capacitor	10V metal1/metal2/metal3/metal4 fringe capacitor	FR
csf4a	Capacitor	Fringe capacitor	45V metal1/metal2/metal3/metal4 fringe capacitor	FR
csf5	Capacitor	Fringe capacitor	10V metal1/metal2/metal3/metal4/metal5 fringe capacitor	FR
csf5a	Capacitor	Fringe capacitor	45V metal1/metal2/metal3/metal4/metal5 fringe capacitor	FR
csft4	Capacitor	Fringe capacitor	10V metal1/metal2/metal3/metal top fringe capacitor	FR
csft4a	Capacitor	Fringe capacitor	45V metal1/metal2/metal3/metal top fringe capacitor	FR
csft5	Capacitor	Fringe capacitor	10V metal1/metal2/metal3/metal4/metal top fringe capacitor	FR
csft5a	Capacitor	Fringe capacitor	45V metal1/metal2/metal3/metal4/metal top fringe capacitor	FR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
csft6	Capacitor	Fringe capacitor	10V metal1/metal2/metal3/metal4/metal5/metal top fringe capacitor	FR
csft6a	Capacitor	Fringe capacitor	45V metal1/metal2/metal3/metal4/metal5/ metal top fringe capacitor	FR
cmm3	Capacitor	MIM capacitor	single MIM capacitor between metal2 and metal3	CR
cmm4	Capacitor	MIM capacitor	single MIM capacitor between metal3 and metal4	CR
cmm4t	Capacitor	MIM capacitor	single MIM capacitor between metal3 and metal top	FR
cmm5t	Capacitor	MIM capacitor	single MIM capacitor between metal4 and metal top	FR
cmm6t	Capacitor	MIM capacitor	single MIM capacitor between metal5 and metal top	FR
cmmh3	Capacitor	MIM capacitor	single MIM capacitor (high capacitance) between metal2 and metal3	CR
cmmh4	Capacitor	MIM capacitor	single MIM capacitor (high capacitance) between metal3 and metal4	CR
cmmh4t	Capacitor	MIM capacitor	single MIM capacitor (high capacitance) between metal3 and metal top	VR
cmmh5t	Capacitor	MIM capacitor	single MIM capacitor (high capacitance) between metal4 and metal top	VR
cmmh6t	Capacitor	MIM capacitor	single MIM capacitor (high capacitance) between metal5 and metal top	VR
cdmm4	Capacitor	MIM capacitor	double MIM capacitor between metal2, metal3 and metal4	FR

Primitive Device Table and Release Status

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
cdmm4t	Capacitor	MIM capacitor	double MIM capacitor between metal2, metal3 and metal top	FR
cdmmh4t	Capacitor	MIM capacitor	double MIM capacitor (high capacitance) between metal2, metal3 and metal top	VR
cdmmh4	Capacitor	MIM capacitor	double MIM capacitor (high capacitance) between metal2, metal3 and metal4	VR
ctmm5	Capacitor	MIM capacitor	triple MIM capacitor between metal2, metal3, metal4 and metal5	FR
ctmm5t	Capacitor	MIM capacitor	triple MIM capacitor between metal2, metal3, metal4 and metal top	FR
ctmmh5t	Capacitor	MIM capacitor	triple MIM capacitor (high capacitance) between metal2, metal3, metal4 and metal top	VR
ctmmh5	Capacitor	MIM capacitor	triple MIM capacitor (high capacitance) between metal2, metal3, metal4 and metal5	VR
dn	Diode	Junction diode	diode NDIFF / PWELL1 (1.8V)	FR
dp	Diode	Junction diode	diode PDIFF / NWELL1 (1.8V)	FR
dnw	Diode	Junction diode	diode NWELL1 / PSUB (1.8V)	FR
dn3	Diode	Junction diode	diode NDIFF / PWELL2 (3.3V)	FR
dp3	Diode	Junction diode	diode PDIFF / NWELL2 (3.3V)	FR
dnw3	Diode	Junction diode	diode NWELL2 / PSUB (3.3V)	FR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
dnn3	Diode	Junction diode	Dode NDIFF / PSUB (3.3V)	FR
ddnwmv	Diode	Junction diode	diode DNWELLMV / PSUB	FR
dpdnwmv	Diode	Junction diode	diode PDIFF / DNWELLMV	FR
dipdnwmv	Diode	Junction diode	diode ISOWELL / DNWELLMV	FR
ddnw	Diode	Junction diode	diode DNWELL / PSUB	FR
dpdnw	Diode	Junction diode	diode PDIFF / DNWELL	FR
dipdnw	Diode	Junction diode	diode ISOWELL / DNWELL	FR
dnhpw	Diode	Junction diode	diode NDIFF / HVPWELL	FR
dphnw	Diode	Junction diode	diode PDIFF / HVNWELL	FR
dhpw	Diode	Junction diode	diode HVPWELL / DNWELL	FR
dhnw	Diode	Junction diode	diode HVNWELL / PSUB	FR
dndf	Diode	Junction diode	diode NDF / PSUB	FR
dpdwhn	Diode	Junction diode	diode PDF / HNW	FR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
dwhn	Diode	Junction diode	diode HNW / PSUB	FR
dpwhn	Diode	Junction diode	diode PDIFF / HNW	FR
dn3dpl	Diode	Junction diode	NDIFF / DEPL parasitic junction diode	FR
ddpldnw	Diode	Junction diode	DEPL / DNWELL parasitic junction diode	FR
dsb	Diode	Schottky diode, Superseded	18V Schottky diode	FR
dsba	Diode	Schottky diode	18V Schottky diode	CR
dnp20	Diode	Protection diode	20V N-type protection diode	FR
dpp20	Diode	Protection diode	20V P-type protection diode	FR
dphoa	Diode	Photodiode	Photodiode for visible and infrared light detection	VR
dphob	Diode	Photodiode	Photodiode for infrared light detection	VR
dphoc	Diode	Photodiode	Photodiode for ultraviolet, visible and infrared light detection	VR
dphoc0	Diode	Photodiode	Blind (metal covered) reference photodiode for ultraviolet, visible and infrared light detection	VR
dphocfp	Diode	Photodiode	Blind (poly covered) reference photodiode for ultraviolet, visible and infrared light detection	VR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
dphod	Diode	Photodiode	Photodiode for ultraviolet, visible and infrared light detection	VR
dphod0	Diode	Photodiode	Blind (metal covered) reference photodiode for ultraviolet, visible and infrared light detection	VR
dphodfp	Diode	Photodiode	Blind (poly covered) reference photodiode for ultraviolet, visible and infrared light detection	VR
dapda	Diode	Photodiode	Avalanche photodiode with breakdown voltage < 20V	CR
dapda0	Diode	Photodiode	Blind (metal covered) reference avalanche photodiode with breakdown voltage < 20V	CR
dspada	Diode	Photodiode	Single-photon avalanche diode for low light levels with breakdown voltage < 20V	CR
dspada0	Diode	Photodiode	Single-photon avalanche diode for high light levels (metal covered) with breakdown voltage < 20V	CR
dpol	Diode	Polysilicon diode	Polysilicon diode	VR
pfuse	Memory	Poly fuse	polysilicon fuse	FR
hall1	Sensor	Hall sensor	Hall sensor (available on request)	CR
qpvhbscr	Bipolar transistor	ESD, PNP bipolar, Vertical bipolar	ESD protected HV PNP bipolar transistor	CR
pmb	MOS transistor	ESD, P-type FET	5V ESD PMOS	VR
qpvascr	Bipolar transistor	ESD, PNP bipolar, Vertical bipolar	HVPWELL in DNWELL isolated scr	FR

Device Name	Device Type	Subtype	Description	Jun'19: PDK v8.0.1
rdp_io	Resistor	ESD, P-type resistor	PDIFF drain ballast resistor of pmb (Pdiff in HVNWELL in DNW)	VR
rdn_esd	Resistor	ESD, N-type resistor	NDIFF drain ballast resistor of ESD nma (Ndiff in HVPWELL)	VR
rdp_esd	Resistor	ESD, P-type resistor	PDIFF drain ballast resistor of ESD pma (Pdiff in HVNWELL in HNW)	VR
rnw_scr	Resistor	ESD, Well resistor	1.8V LV NMOS triggered SCR dio/res network resistor	VR
rnw3_scr	Resistor	ESD, Well resistor	3.3V LV NMOS triggered SCR dio/res network resistor	VR
qpvhscr	Bipolar transistor	ESD, PNP bipolar, Vertical bipolar	ESD protected HV PNP bipolar transistor	FR

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