



New Product Announcement

DXTN/P 78Q & 80Q Series

Ultra-Low $V_{CE(sat)}$ NPN and PNP Bipolar Transistors Maximize Power Density and Efficiency in Compact Automotive Designs

Diodes Incorporated (Diodes) introduces the automotive-compliant* DXTN/P 78Q & 80Q series of ultra-low $V_{CE(sat)}$ NPN and PNP bipolar transistors.

The twelve devices, covering 30V, 60V, and 100V ratings, deliver exceptional conduction efficiency and thermal performance for demanding automotive power switching and control.

Suitable for 12V, 24V, and 48V systems, they support applications including MOSFET and IGBT gate driving, load switching, LDO regulation, DC-DC conversion, motor and actuator control. Rated to +175°C with high ESD robustness (HBM 4kV, CDM 1kV), they ensure reliable operation in harsh environments.

The compact PowerDI®3333-8 package (just 3.3mm x 3.3mm) reduces PCB footprint by up to 75% versus SOT223 and offers ultra-low thermal resistance (4.2°C/W).

Side Wall Plateable (SWP) technology improves AOI visibility and solder joint strength for efficient and reliable manufacturing.

With BV_{CEO} up to 100V, continuous current to 10A (20A peak), and saturation voltage as low as 17mV, these transistors minimize conduction losses by up to 50%, enabling cooler, more efficient designs.

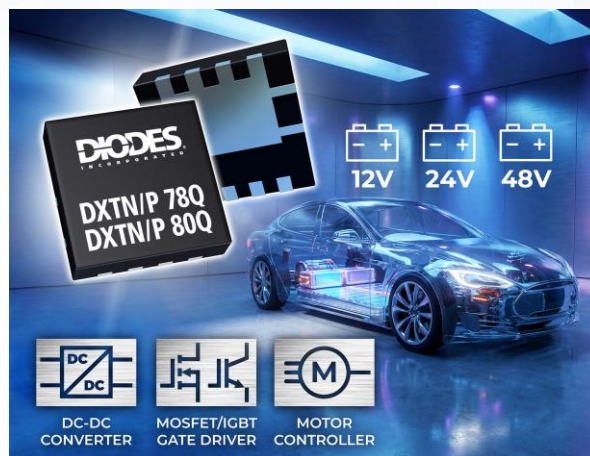
*Automotive-compliant - AEC qualified, manufactured in facilities certified to IATF 16949, supporting PPAP documents.

PowerDI® is a registered trademark of Diodes Incorporated in the United States and other countries.

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The DIODES Advantage

Drive automotive designs with Diodes' DXTN/P 78Q & 80Q series, delivering high efficiency, robust reliability, and space-saving innovation for next-generation power solutions.

- Superior Efficiency**
 Ultra-low $V_{CE(sat)}$ (down to 17mV) and low on-state resistance (down to 12mΩ) minimize conduction losses, reducing heat and improving overall system efficiency
- Compact, High Thermal Performance Package**
 PowerDI3333-8 saves up to 75% PCB space versus SOT223 and delivers ultra-low thermals for cooler operation
- Broad Application Range**
 30V–100V and up to 10A continuous current (20A peak), ideal for 12V, 24V, and 48V automotive power systems
- Enhanced Manufacturing and Quality Assurance**
 SWP feature improves AOI visibility and joint strength
- Automotive-Compliant Reliability**
 +175°C rating and strong ESD protection ensures dependable performance in harsh environments

Applications

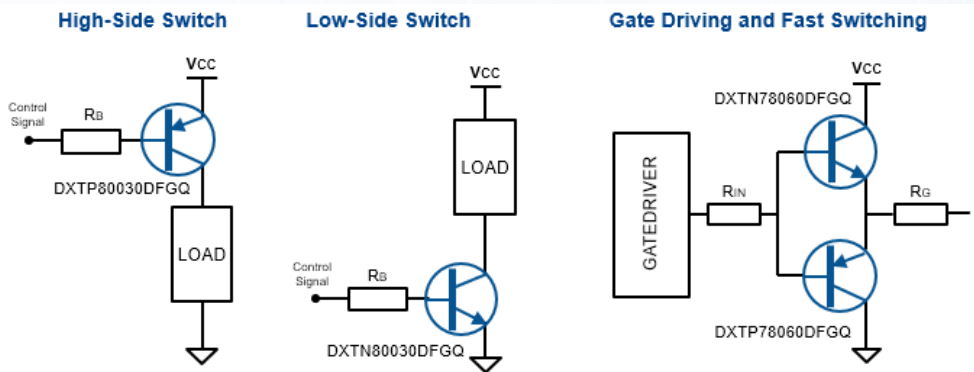
- MOSFET and IGBT gate drivers
- Load switches
- Linear voltage regulation
- DC-DC converters
- Motors, solenoids, relays, and actuator control



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Typical Applications



Product Portfolio

Part Number	$ V_{CE0} $	Pol.	$ I_C $	$ I_{CM} $	$R_{CE(sat)}$	P_D	h_{FE} (Min)	h_{FE} (Min) @ I_C @condition	$ V_{CE(sat)} $ Max @ I_C 1A, I_B 100mA	$ V_{CE(sat)} $ Max @ I_C / I_B		f_T Typ.	T_J, T_{STG} -55°C to +175°C
	V		A	A	mΩ	W			mV	mV	A/mA		
DXTx78Q Series													
DXTN78030DFGQ	30	NPN	9	15	14	2.4	300	100 @ 9A	35	125	4/80	150	Yes
DXTP78030DFGQ		PNP	6.5	12	16	2.4	300	90 @ 6.5A	40	170	3/60	200	Yes
DXTN78060DFGQ	60	NPN	6	12	23	2.4	300	100 @ 3A	45	125	3/150	150	Yes
DXTP78060DFGQ		PNP	4.5	10	42	2.4	300	130 @ 2.5A	65	250	2.5/125	200	Yes
DXTN78100CFGQ	100	NPN	4	8	32	2.4	250	35 @ 2A	60	120	2/200	150	Yes
DXTP78100CFGQ		PNP	2.5	8	60	2.4	250	60 @ 1.5A	85	125	1.5/150	150	Yes
DXTx80Q Series													
DXTN80030DFGQ	30	NPN	10	20	12	2.4	300	100 @ 10A	30	125	5/100	100	Yes
DXTP80030DFGQ		PNP	7.5	14	13	2.4	300	120 @ 7.5A	35	150	4/80	100	Yes
DXTN80060DFGQ	60	NPN	6.5	15	16	2.4	300	140 @ 4A	40	130	4/200	100	Yes
DXTP80060DFGQ		PNP	6	12	26	2.4	300	190 @ 3.5A	50	550	5/250	100	Yes
DXTN80100CFGQ	100	NPN	5.5	10	23	2.4	250	40 @ 3.5A	45	160	3.5/175	100	Yes
DXTP80100CFGQ		PNP	4	10	40	2.4	250	75 @ 2.5A	70	300	2.5/125	100	Yes

Ordering Information

Orderable Part Numbers	Package	Reel Size	Tape Width	Packing	
		Inches	mm	Quantity	Carrier
DXTN78030DFGQ-7 DXTP78030DFGQ-7 DXTN78060DFGQ-7 DXTP78060DFGQ-7 DXTN78100CFGQ-7 DXTP78100CFGQ-7 DXTN80030DFGQ-7 DXTP80030DFGQ-7 DXTN80060DFGQ-7 DXTP80060DFGQ-7 DXTN80100CFGQ-7 DXTP80100CFGQ-7	PowerDI3333-8/SWP (Type UX)	7	12	2,000	Reel

SWP= side-wall plateable leads